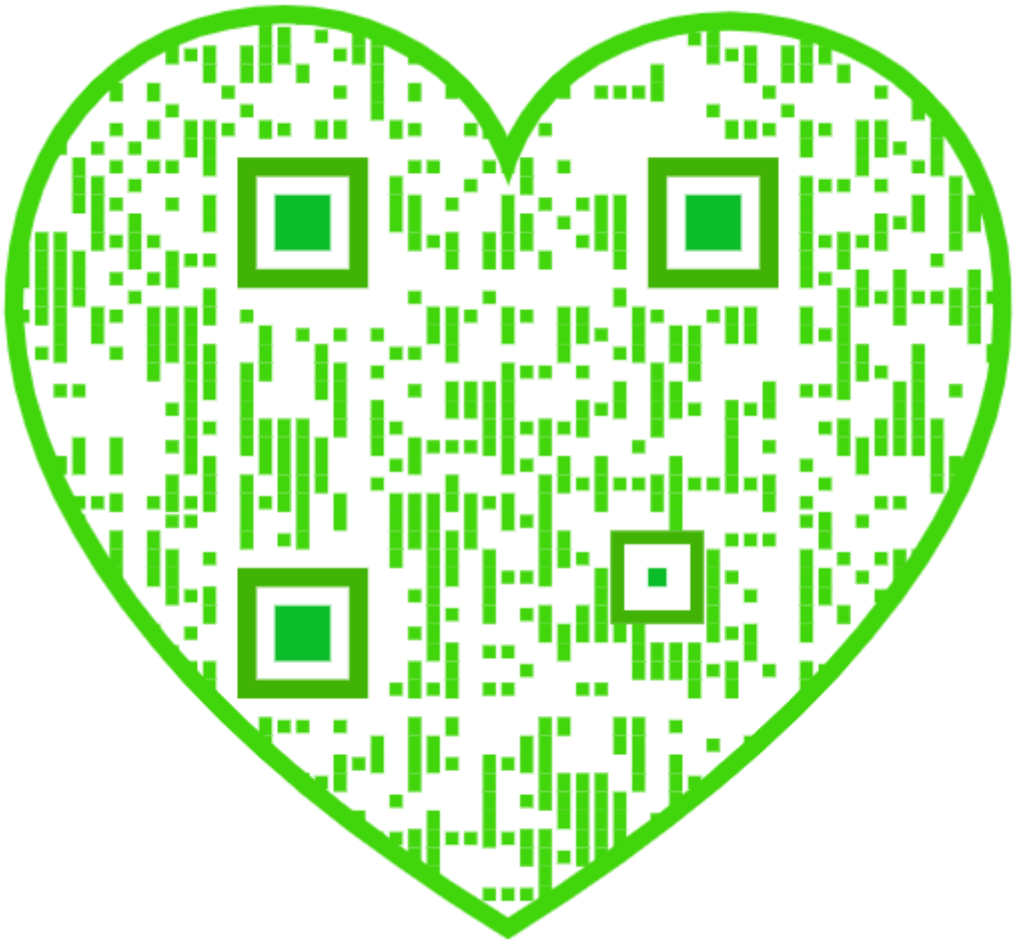
UNIV. OF
TORONTO
LIBRARY



ARCHITECTURE

INDEX—VOLUMES XXXIX AND XL

JANUARY—DECEMBER, 1919

156015
17/7/20.

ILLUSTRATIONS

CHURCHES.

Cathedral of Soissons (Aisne), France . . . . . December Frontispiece
The Huguenot Memorial Church, Pelham Manor, N. Y., Francis A. Nelson, Architect
Plates lxxxiii, lxxxiv, lxxxv, Page 171
Interior of Old First Presbyterian Church, New York, Restored by Grosvenor Atterbury, Architect
August Frontispiece
The National Baptist Roger Williams Memorial, Washington, D. C., Egerton Swartwout, Architect, Page 66
St. Joseph's R. C. Church, Fort Edward, N. Y., M. L. & H. G. Emery, Architects . Plates cvi, cvii, cviii
St. Lawrence Church, Harrisburg, Pa., Paul Monaghan, Architect . . . . . Pages 319, 321
Winchester Cathedral, Winchester, England . . . . . Frontispiece, Pages 237–242

CLUB-HOUSES.

Blind Brook Club, Portchester, N. Y., Frank Ashburton Moore, Architect
Plates clxxxiv, clxxxv, clxxxvi, clxxxvii, clxxxviii
Cosmopolitan Club, New York, Edward C. Dean, Architect . . . . . Pages 119, 120, 121
Garden City Country Club, Nassau Boulevard, Long Island, Morrell Smith, Architect, Plates cxv, cxvi, cxvii
Musical Mutual Protective Union Building, New York, Trowbridge & Livingston, Architects
Plates xciv, xcv, xcvi
Nurses' Home, Greenwich, Conn., Wm. B. Tubby, Architect . . Plates cxxxi, cxxxii, cxxxiii, cxxxiv
Philmont Country Club, Philadelphia, Pa., Magaziner & Eberhard, Architects (Formerly Magaziner & Potter) . . . . . Plates cxviii, cxix, cxx
St. Paul Athletic Club, St. Paul, Minn., A. H. Stem, Architect, Plates clviii, clix, clx, clxi, clxii, Pages 279, 280
The Women's City Club of New York, McKim, Mead & White, Architects
Plates lxxxvi, lxxxvii, lxxxviii, lxxxix

FACTORIES, WAREHOUSES, AND POWER-HOUSES.

Administration Building, The Fisk Rubber Co., Chicopee Falls, Mass., George B. Allen, Architect, Plate xc
Holeproof Hosiery Co. of Canada, Ltd., London, Ont., Lockwood, Greene & Co., Engineers . Page 349
Overland Service Building, Boston, Mass., Fred T. Ley & Co., Engineers . . . . Page 349
Roessler and Hasslacher Chemical Co., Perth Amboy, N. J., Stone & Webster, Engineers . Page 348
Factory for Standard Oil Cloth Co., Buchanan, N. Y., Lansing Quick, Architect, Stone & Webster, Engineers . . . . . Page 293
Factory, Henry C. Thompson & Son Co., New Haven, Conn., Lockwood, Greene & Co., Engineers, Page 283
Office Building, Youngstown Sheet and Tube Co., Youngstown, Ohio, Stone & Webster, Engineers, Page 293

GARDENS.

Gateway and Screen at Easton Neston, Northamptonshire, England . . . . . Plate xxxiii
Giusti Gardens, Verona . . . . . Plate xvi
The Grand Cascade, St. Cloud . . . . . Plate xvii
Ewhurst, Hampshire, England . . . . . Plate xxxi
Water-Garden at Bridge House, Weybridge, England . . . . . Plate xxxii

NA 1 A716 v.30-40

GARAGES.

Garage Group, Estate Charles P. Holzderber, Harriman, N. Y., Wm. Edgar Moran, Architect, Pages 150, 151
Group of Private Garages . . . . . Pages 225, 227

HOSPITALS.

Northeastern Hospital, Philadelphia, Pa., Ballinger & Perrot, Architects . . . . Pages 258, 259

HOTELS AND APARTMENTS.

Hotel Commodore, New York, Warren & Wetmore, Architects . Plates xlvii, xlviii, xlix, l, li, Page 99
The O. Henry Hotel, Greensboro, N. C., W. L. Stoddart, Architect . . Plate clxxiv, Pages 315–318
Hotel Pennsylvania, New York, McKim, Mead & White, Architects . Plates liii, liv, lv, lvi, lvii, Page 92
Whittle Springs Hotel and Club-House, Knoxville, Tenn., Barber & McMurry, Architects Plates lxv, lxvi, lxvii

HOUSES—CITY AND COUNTRY.

F. F. Alexander, Glen Head, L. I., Warren & Clark, Architects . . . . . Pages 272, 273
J. Harry Alexandre, Glen Head, L. I., Warren & Clark, Architects . . . Pages 338, 339, 341
A. O. Aulabaugh, Dayton, Ohio, Louis Lott, Architect . . . . . Page 15
Cecil H. Baker, Knoxville, Tenn., Barber & McMurry, Architects . . . . Plates cxxiv, cxxv
J. F. Barrett, Richmond, L. I., W. Wiegand, Architect . . . . . Pages 312–314
C. C. Blackmore, Dayton, Ohio, Louis Lott, Architect . . . . . Page 21
Alexander Bonnyman, Knoxville, Tenn., Barber & McMurry, Architects . . Pages 261, 262, 263
Earle P. Charlton, Westport Harbor, Mass., Parker Morse Hooper and Frank C. Farley, Architects Plates cxlviii, cxlix, cl, cli, clii
The Coppice, Cookham Dene, Berkshire, England, T. H. Lyon, Architect . . . . Page 45
Cottage and Plans, V. J. Clirehugh, Architect . . . . . Pages 310, 311
Country Home, Far Hills, N. J., Emilio Levy, Architect . . . . . Pages 93, 94, 95, 96
Arthur B. Curtiss, Elizabeth, N. J., Herman Fritz, Architect . . . . . Page 86
Domestic Architecture of Bermuda . . . . . Plates cix, cx, cxi, Pages 203–205
Henry P. Davison, New York City, Walker & Gillette, Architects Plates lxxvi, lxxvii, lxxviii, lxxix, lxxx, lxxxi, lxxxii
Mrs. Frank E. Dodge, Stonington, Conn., H. B. Little, Architect . . . Plate lxviii, Pages 145, 146
Julian Eltinge, Los Angeles, Cal., Pierpont Davis, Architect . . . . . Frontispiece, Page 59
Franklin Gaylord, W. Englewood, N. J., W. Edgar Baker, Jr., Architect . . . Pages 216, 217
Designs for Residence, Col. E. H. R. Green, S. Dartmouth, Mass., Alfred C. Bossom, Architect, Pages 211–214
Group of Cottages at Maplewood, N. J., Kenneth W. Dalzell, Architect . . . Pages 78, 79, 82, 83
Group of Small Houses, Harold E. Paddon, Architect . . . . Pages 197, 200, 201, 206, 207
E. T. Hartman, Lexington, Mass., Wm. Roger Greeley, Architect (Kilham & Hopkins), Plates cxxi, cxxii, cxxiii
"Hellens," Dartmoor, Islington, S. Devon, England, T. H. Lyon, Architect . . . . Page 231
Albert Herter, East Hampton, L. I., Grosvenor Atterbury, Architect Plates cxxxv, cxxxvi, cxxxvii, cxxxviii, cxxxix
House at Lawrence, Mass., Wm. Roger Greeley, Architect (Kilham & Hopkins) . Plates cxxvi, cxxvii
Housing Development, Newburgh, N. Y., Ludlow & Peabody, C. H. Sparry, Architects, Pages 172, 173, 174, 175
Ideal Homes Competition, London "Daily Mail," Evelyn Simmons and Leslie Glencross, Architects, Page 236
J. W. Johnson, Crystal Lake, Pa., Edward Langley, Architect . . . . Pages 157, 158, 159
Eugene Kruskal, Pelham Manor, N. Y., Julius Gregory, Architect . . . . . Page 51
Dr. Frederick W. Lamb, Cincinnati, Ohio, G. C. Burroughs, Architect . . . . Plate xxxviii
B. W. Lamson, Cincinnati, Ohio, G. C. Burroughs, Architect . . . . . Page 243
W. V. Lawrence, Lawrence Park, Bronxville, N. Y., Bates & How, Architects, Plates xxxiv, xxxv, Page 77
Herbert H. Lehman, Purchase, N. Y., Harry Allan Jacobs, Architect . Plates lxiii, lxiv, Pages 141, 143
E. H. Murdock, Cincinnati, Ohio, G. C. Burroughs, Architect . . . . Pages 232, 233
P. Barton Myers, Dayton, Ohio, Louis Lott, Architect . . . . . Page 19
No. 4. Officer's House, Dayton, Ohio, Louis Lott, Architect . . . . . Page 25
No. 6. Officer's House, Dayton, Ohio, Louis Lott, Architect . . . . . Page 17
No. 7. Officer's House, Dayton, Ohio, Louis Lott, Architect . . . . . Page 13
Capt. A. P. Osborn, Glen Head, L. I., Warren & Clark, Architects . . . Plates clv, clvi, clvii
W. B. Patterson, Dayton, Ohio, Louis Lott, Architect . . . . . Page 23
Henry C. Perkins, Hamilton, Mass., Lynch Luquer, Architect . . . . Pages 126, 127
Samuel F. Pogue, Cincinnati, Ohio, G. C. Burroughs, Architect . . . . Plates xxxvi, xxxvii

HOUSES—CITY AND COUNTRY—Continued.

Ranch House, North Yakima, Wash., Wm. M. Kenyon, Maurice F. Maine, Architects Plates xxxix, xl, Pages 70, 71
George C. Rew, Coronado, Cal., Elmer Grey, Architect . . . . Plate lii, Pages 100, 105, 107
Frank L. Sample, Teaneck, N. J., Aymar Embury, II, Architect, Louis E. Welsh, Associate, Plates ciii, civ, cv
J. R. Sheffield, New York, Walter B. Chambers, Architect . Plates clxxix, clxxx, clxxxi, clxxxii, clxxxiii
"Tamaracks," Residence of Franklin G. Colby, Andover, N. J. . Plates lviii, lix, lx, Pages 111, 112, 113
Tenant's House for John H. Patterson, Dayton, Ohio, Louis Lott, Architect . . . . . Page 27
S. J. Thompson, Glendale, Ohio, G. C. Burroughs, Architect . . . . . Page 223
Todd Ford, Pasadena, Cal., Reginald Johnson, Architect . . . . . Page 61
W. B. Tubby, Jr., Greenwich, Conn., Wm. B. Tubby, Architect . . . . Pages 253, 254, 255
Villa Maria on the Dunes, Southampton, L. I., E. P. Mellon, Architect Plates clxxv, clxxvi, clxxvii, clxxviii, Pages 307–309
Fred Von Steinwehr, Cincinnati, Ohio, G. C. Burroughs, Architect . . . . . Page 345
Geo. H. Wells, Mt. Vernon, N. Y., Geo. H. Wells, Architect . . . . . Plates cxl, cxli
A. Clayton Woodman, Merion, Pa., Frank Seeburger and Charles F. Rabenold, Architect Plate lxxv, Pages 135, 137
Mrs. R. B. Worthington, St. Petersburg, Fla., W. S. Shull, Architect . Plates cxci, cxcii, cxciii, cxciv

MEASURED DETAILS.

Milford Town Hall, Milford, Conn., Drawn by Edward Bauer . . . . . Double Plate xxx
First Reformed Church, Albany, N. Y., Philip Hooker, Architect, Restored by John L. Dykeman, Architect . . . . . Plates xci, xcii, xciii
Second Presbyterian Church, Albany, N. Y., Philip Hooker, Architect, Restored by John L. Dykeman, 1918 . . . . . Plates cxlii, cxliil, cxliv, cxlv, cxlvi
The Second Reformed Church, Albany, N. Y., Philip Hooker, Architect, Restored by John L. Dykeman, 1918 . . . . . Frontispiece, Plates lxix, lxx, lxxi, lxxii, lxxiii, lxxiv, Pages 123, 124
Entrance Detail, House at Georgetown, D. C., Measured and Drawn by L. L. Huot . . . Plate clxxxix
Mantel in the Hood Residence, Washington, D. C., Measured and Drawn by A. W. Eichler and L. L. Huot . . . . . Plate cxc
Entrance Detail, Hood Residence, Washington, D. C., Measured and Drawn by Alfred W. Eichler and Louis L. Huot . . . . . Plate cliii
Mantel, House at Georgetown, D. C., Measured and Drawn by Louis L. Huot . . . . Plate cliv
Doorway, Miller House, Ludlowville, N. Y., Measured and Drawn by Carl C. Tallman, Plates cxxviii, cxxix
Doorway, Baber House, Skaneateles, N. Y., Measured and Drawn by Carl C. Tallman . . Plate cxxx
Parlor Mantel, The Austin House, Skaneateles, N. Y., Measured and Drawn by Carl C. Tallman, Plate lxi
Doorway, Soule House, Sennett, N. Y., Measured and Drawn by Carl C. Tallman . . . Plate lxii
Mantel, Carvel Hall, Annapolis, Md., Drawn by Edgar Salomonsky and Verna Cook Salomonsky, Plate cxii
Doorway, Carvel Hall, Annapolis, Md., Drawn by Edgar Salomonsky and Verna Cook Salomonsky, Plate cxiii
Stairway, State Capitol Building, Annapolis, Md., Drawn by Edgar Salomonsky and Verna Cook Salomonsky . . . . . Plate cxiv
Doorway, Taylor House, Alexandria, Va., Measured and Drawn by J. L. Keister, O. J. Munson, J. A. Weber . . . . . Plate xli

MUNICIPAL DEVELOPMENTS.

Firestone Park, Akron, Ohio, John F. Suppes, Architect . . . . . Pages 327–331
The Greater City of Three Rivers, P. Q., Canada, Mann & MacNeille, Architects, Designers, and Municipal Developers . . . . . Frontispiece, Pages 181–190
Housing Development for Connecticut Mills, Danielson, Conn., Alfred C. Bossom, Architect Plates xlii, xliii, xliv, xlv, xlvi, Page 69
The Town Site of the New Cornelia Copper Co., Ajo, Arizona, Wm. M. Kenyon, Maurice F. Maine, Architects . . . . . Plates xi, xii, xiii, xiv, xv

OFFICE, BANK, AND STORE BUILDINGS.

The Bush Terminal Sales Building, New York City, Helmle & Corbett, Architects Frontispiece, Plates i, ii, iii, iv, v, vi, vii, viii, ix, x

PUBLIC BUILDINGS.

Baldwin High School, Birmingham, Mich., Van Leyen & Schilling, Architects, H. J. Keough, Associate Plates xcvii, xcviii, Page 165
The Butler Art Institute, Youngstown, Ohio, McKim, Mead & White, Architects November Frontispiece, Plates clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix, Pages 295, 296
Children's Home, Stamford, Conn., Harry Allan Jacobs, Architect . . . . Pages 46, 47, 48, 49
High School, Englewood, N. J., Ernest Sibley and John J. Ferry, Associate Architects, Plate clxxiii, Pages 298-302
High School, Leonia, N. J., Ernest Sibley, Architect . . . . Plates clxx, clxxi, clxxii, Page 297
Mural Paintings in the Rotunda, State Education Building, Albany, N. Y., Designed and Executed by Will H. Low . . . . . Plates xcix, c, ci, cii, Pages 193, 194, 195
New Jordan School, Waterford, Conn., Louis H. Goddard, Architect . . . Pages 115, 117, 118
New Town Hall, Milford, Conn., Tracy & Swartwout, Architects, Frontispiece, Plates xxvi, xxvii, xxviii, xxix
U. S. Post-Office, Augusta, Ga., James A. Wetmore, Supervising Architect, Treasury Department, Page 178
U. S. Post-Office, Austin, Tex., James A. Wetmore, Supervising Architect, Treasury Department, Page 178
U. S. Post-Office, Bemidji, Minn., James A. Wetmore, Supervising Architect, Treasury Department, Page 180
U. S. Post-Office, Cherryvale, Kan., James A. Wetmore, Supervising Architect, Treasury Department, Page 180
U. S. Post-Office, Westerly, R. I., James A. Wetmore, Supervising Architect, Treasury Department, Page 179
U. S. Post-Office, Wooster, Ohio, James A. Wetmore, Supervising Architect, Treasury Department, Page 179

THEATRES.

Capitol Theatre, New York, Thomas W. Lamb, Architect . Plates xviii, xix, xx, xxi, xxii, xxiii, xxiv, xxv

MISCELLANEOUS.

The Arch of Victory, New York, Thomas Hastings, Architect . . . . Frontispiece, Page 88
Decorations of the Avenue of Victory, New York, Paul Chalfin, Designer . . . . Page 90
Etchings by Lester E. Varian, Architect . . . . . Page 132
The Evangeline Wilbour Blashfield Memorial Fountain, Queensboro Bridge Market, New York, Edwin Howland Blashfield, Painter, Eli Harvey, Sculptor, Chas. W. Stoughton, Architect . Frontispiece, June
High Bridge, New York City, from Photograph by J. B. Carrington . . . . . Page 221
The Lions of St. Mark's in the Bowery, New York . . . . . Page 276
Lych-Gates . . . . . Page 242
Memorial to Dean Van Amringe, Columbia University, New York, McKim, Mead & White, Architects Page 218
Old Doorways, Philadelphia, Pa. . . . . Page 74
Theodore Roosevelt's Service to the National Capital . . . . October Frontispiece, Pages 267–270
The Plans for the Great Roosevelt Memorial Park, Oyster Bay, L. I., Electus D. Litchfield, Architect Pages 290, 291

TEXT

Address of Mr. Thomas R. Kimball, President A. I. A. . . . . Pages 244–246
The Aftermath of the Housing Dilemma. By William E. Groben . . . . . Pages 228, 230
Announcements . . . . . Pages 16, 80, 252, 288, 350
The Architect and the Draftsman. (A Letter.) By Victor Eberhard . . . . . Page 248
The Architectural League Exhibition, New York . . . . . Page 332
Architecture and the Greenhouse (Illustrated). By Harold A. Caparn . . . . Pages 153–156
Art and Electricity (Illustrated). By DeWitt Clinton Pond . . . . . Pages 249–252
Art as an Educator . . . . . Page 260
The Blind Brook Club (Illustrated). Frank Ashburton Moore, Architect . . . . Page 343
A Book of Great Value to Architects . . . . . Page 265
Book Reviews . . . . . Pages 44, 80, 168, 271, 350
Building Costs in England and France . . . . . Page 286
Building Deficiency in the North Central States . . . . . Page 199
A Building Deficiency of $500,000,000 in Six Eastern States . . . . . Page 81
The Building of the "Tamaracks" (Illustrated). By Franklin G. Colby . . . . Pages 111–114
The Building Situation of To-Day (Illustrated). By Richard P. Wallis . . . . Pages 166–169
Build Now. By Harold E. Paddon . . . . . Page 196
The Bush Terminal Sales Building (Illustrated). Helmle & Corbett, Architects . . . . Pages 1–4
The Butler Art Institute, Youngstown, Ohio (Illustrated), McKim, Mead & White, Architects, Pages 295, 296
The Carrère Memorial (Illustrated) . . . . . Page 335

TEXT—Continued.

Comparative Characteristics of Materials and Construction for Walls of Small Houses. By H. Vandervoort Walsh . . . . . Pages 128–131
Comparison of the Various Types of Plan Adapted to Block Formation, Block Size 200′ x 800′. By Henry Atterbury Smith . . . . . Page 344
A Cost System for the Small Architect's Office. By Harry Leslie Walker, M. A. I. A. . Pages 75, 76
A Cottage in Somersetshire (Illustrated) . . . . . Page 81
Country Home, Far Hills, N. J. Emilio Levy, Architect . . . . . Page 93
The Country Home of Earle P. Charlton (Illustrated). Parker Morse Hooper, Frank C. Farley, Associate Architects . . . . . Pages 284–286
Danielson, a Unique Housing Development. By Alfred C. Bossom, Architect . . . . Pages 69, 70
The Dawn of a New Era. Inaugural Address of Henry K. Holsman, President Illinois Chapter A. I. A., Page 215
The Dawn of the American Renaissance. By David Varon . . . . . Pages 289, 292
The Decorations of the Avenue of Victory (Illustrated). By Paul Chalfin . . . . Pages 89–91
The Domestic Architecture of Bermuda (Illustrated). By Harold Donaldson Eberlein . Pages 203–205
Door-Knockers—Something About Their Origin and Development (Illustrated) . . Pages 176, 177
Editorial and Other Comment
Pages 11, 12, 39, 40, 67, 68, 101, 102, 133, 134, 163, 164, 191, 219, 220, 247, 277, 278, 305, 306, 333, 334
Farm Improvements and Rural Construction Work Will Aid in Readjustment . . . . Page 110
Firestone Park, Akron, Ohio (Illustrated). John F. Suppes, Architect . . . . . Page 327
Floor and Wall Tile, Their Mission and Application (Illustrated) . . . . . Pages 160–162
For a Better Co-operation Between Architects, Engineers, the National Government, and Other Organizations. By D. Knickerbacker Boyd . . . . . Page 50
Garden Architecture and Sculpture (Illustrated). By Harold A. Caparn . . . . Pages 34–38
Gardens and Their Ornament (Illustrated) . . . . . Pages 62–65
The O. Henry Hotel, Greensboro, N. C. (Illustrated). W. L. Stoddart, Architect . . Pages 315–318
The Hotel Commodore. Warren & Wetmore, Architects . . . . . Page 98
The Hotel Pennsylvania (Illustrated) . . . . . Page 91
House of W. V. Lawrence (Illustrated) . . . . . Page 77
The Huguenot Memorial Church, Pelham Manor, N. Y. (Illustrated). By Francis A. Wilson Pages 170, 171
Institute Committee Assignments of the Illinois Chapter . . . . . Page 235
Interpretation of the Classic Orders of Architecture. By David Varon . . . . Pages 303, 304
Italy Will Take Large Quantities of American Lumber . . . . . Page 80
Japanese Architects Our Guests . . . . . Page 22
Legal Decisions. By John Simpson . . . . . Pages 24, 26, 56
Louisville's Million-Dollar Factory Fund . . . . . Page 114
Lumber Salvage in France . . . . . Page 275
Lych-Gate at Islington, S. Devonshire, England (Illustrated). By T. H. Lyons, Architect . Page 242
A Million Homes Needed by Our Allies . . . . . Page 14
The Moderate-Cost Apartment-House. By Henry Atterbury Smith . . . . Pages 209, 210
Modern Building Superintendence. By David B. Emerson.
I. Introductory . . . . . Page 264
II. Excavation, Foundation, Concrete . . . Pages 281–283
III. Structural Steel and Floor Arches . . . Pages 320, 322
IV. Cut Stone, Ornamental Terra-Cotta, and Brickwork Pages 346, 347, 350
Money and Building—Present Developments—Future Prospects . . . . . Pages 14, 16
Mural Paintings by Will H. Low in the State Education Building, Albany, N. Y. (Illustrated), Pages 193–195
New Activities of the Indiana Limestone Quarrymen's Association . . . . . Page 54
The New Jordan School Building at Waterford, Conn. By B. F. Dingman . . . Pages 115–118
New York City Real Estate Values . . . . . Page 48
New York Society of Architects . . . . . Page 235
New York's Victory Arch (Illustrated). By Thomas Hastings . . . . . Pages 87, 88
No Material Reductions Expected in Lumber Prices . . . . . Page 110
The North Yakima Ranch House (Illustrated). Wm. M. Kenyon and Maurice F. Maine, Architects Pages 70, 71
A Notable Civic Development at Three Rivers, Province of Quebec (Illustrated). Mann & MacNeille, Architects, Engineers, and Municipal Developers . . . . . Pages 181–190
Paris to Replace Hovels of "Zoniers" . . . . . Page 286
The Park Avenue Viaduct, New York City (Illustrated) . . . . . Pages 41–44
A Patriotic Duty as Well as a Good Business Proposition . . . . . Page 246
The Perfect Dwelling. By Robert Thomson . . . . . Pages 292, 294
Porto Rican Building (Illustrated). By E. C. Bartholomew . . . . . Pages 147–149

TEXT—Continued.

A Possible Saving in Building Expense. By Richard P. Wallis . . . . . Pages 274, 275
Practicality Must Supplement Idealism . . . . . Page 322
Pre-War Prices and Pre-War Wage Scales Are Out of the Question . . . . . Page 304
The Present Cost of Building. By Willis Polk . . . . . Page 28
Protection Against White Ants . . . . . Page 311
Public Works Can Help . . . . . Page 246
Rhythm in Our Architecture. By David Varon . . . . . Page 202
Roosevelt Memorial Association . . . . . Page 271
Scientific Management of the Drafting-Room. By Henri C. Heps . . . . . Pages 108–110
Selecting the Right Roofing Material. By H. Vandervoort Walsh . . . Pages 336, 337, 340, 342
A Short Talk on Building Construction. By David B. Emerson . . . . . Pages 226, 228
Some Comments on Housing Conditions . . . . . Pages 256, 257, 260
Some Reasons for High Building Costs . . . . . Page 288
Some Reflections of a Draughtsman. Part I. By Talbot Faulkner Hamlin . . . Pages 72, 73
Part II . . . . . Pages 140, 142, 144
Part III . . . . . Pages 222, 224
Southern California's New Architecture (Illustrated) By Elmer Grey . . . Pages 57–61, 103–106
Specifications. I. The Writing of Specifications . . . . . Pages 32, 33
By David B. Emerson. II. Danger Signals for Specification Writers . . . Pages 84, 85
III. Some Further Practical Suggestions on the Writing of Specifications Pages 136, 138, 139, 140
IV. Getting What Is Specified . . . . . Pages 198, 199
The Spirit and the Letter—Can There Be a Typically American Architecture. By David Varon, Pages 5, 6
The Stamford Children's Home (Illustrated). Harry Allan Jacobs, Architect . . . Pages 46–48
The Status of the Architect. By Irving K. Pond . . . . . Page 192
Superintendence—By a Superintendent. By Enos V. Foulk . . . . . Page 97
Theatre Decoration at the New Capitol. By A. Lincoln Cooper . . . . . Page 33
Theodore Roosevelt's Service to the National Capital (Illustrated). By Charles Moore . Pages 267–270
There Is Little Danger of Loss in Judicious Building Investment . . . . . Page 106
To Build or Not to Build (Illustrated). By V. J. Clirehugh . . . . . Pages 310, 311
The Three Hooker Churches (Illustrated). By the Late John L. Dykeman . . . Pages 123–125
The Town Hall at Milford, Conn. (Illustrated). By Egerton Swartwout . . . Pages 29–31
The Town Site of the New Cornelia Copper Co. (Illustrated). By William M. Kenyon . Pages 7–10
The United States Housing Corporation . . . . . Page 265
The Villa Maria (Illustrated). E. P. Mellon, Architect . . . . . Pages 307–309
The Vital Need Is the Immediate Resumption of Industrial Activity . . . . . Page 242
War Memorials . . . . . Page 22
Ways of Financing Home Building . . . . . Pages 234, 235
We Are Going to Build and Build and Build. By Willis Polk . . . . . Page 20
We Must Protect Our Forests . . . . . Page 48
What a New York Club Did With Its Back Yard. By Edward C. Dean . . . . Page 119
What the Huns Have Done for French Art (Illustrated). By A. Kingsley Porter. Photographs by L. A. Porter . . . . . Pages 323–326
Winchester Cathedral (Illustrated). By Canon John Vaughan, M.A. . . . . Pages 237–242
Why Not a Ministry of Fine Arts for the United States? . . . . . Pages 18, 20
Why Not Put Theory Into Practice in Our Architectural Schools? . . . . . Page 20
The Work of the United States Housing Corporation, Hammond, Ind. (Illustrated) . . Pages 52–55

VOL. XXXIX JANUARY, 1919 No. 1

ARCHITECTURE

The PROFESSIONAL ARCHITECTURAL MONTHLY

CONTENTS

TEXT PAGES

THE BUSH TERMINAL SALES BUILDING. (Illustrated) Pages 1–4
Helmle & Corbett, Architects

THE SPIRIT AND THE LETTER—CAN THERE BE A TYPICALLY AMERICAN ARCHITECTURE? - - Pages 5, 6
By David Varon

THE TOWN SITE OF THE NEW CORNELIA COPPER CO. (Illustrated) - - - - - - - - Pages 7–10
By William M. Kenyon

EDITORIAL AND OTHER COMMENT: "The 1919 Outlook," "There Will Still Be Architects," "The Status of the Profession," "Let the Government Finish the Work," "America the Melting-Pot of Architectural Styles," "Examinations for Architects in the State of New York" - - - Pages 11, 12

A MILLION HOMES NEEDED BY OUR ALLIES - - Page 14

MONEY AND BUILDING—PRESENT DEVELOPMENTS—FUTURE PROSPECTS - - - - - - - Pages 14, 16

ANNOUNCEMENTS - - - - - - - - - Page 16

WHY NOT A MINISTRY OF FINE ARTS FOR THE UNITED STATES? - - - - - - - - - Pages 18, 20

WE ARE GOING TO BUILD AND BUILD AND BUILD - Page 20
By Willis Polk

WHY NOT PUT THEORY INTO PRACTICE IN OUR ARCHITECTURAL SCHOOLS? - - - - - - Page 20

WAR MEMORIALS - - - - - - - - - Page 22

JAPANESE ARCHITECTS OUR GUESTS - - - Page 22

LEGAL DECISIONS - - - - - - - - Pages 24, 26
By John Simpson

THE PRESENT COST OF BUILDING - - - - Page 28
By Willis Polk

PLATES AND ILLUSTRATIONS

BUSH TERMINAL SALES BUILDING, NEW YORK CITY
Detail in Entrance Lobby - - - - - - Plate I
Entrance Lobby - - - - - - - - Plate II
Main Reception-Room - - - - - - - Plate III
Business Library - - - - - - - - Plate III
Staircase Connecting First and Second Floors - Plate IV
International Buyers' Club, Second Floor - - Plate V
Merchants' Club - - - - - - - Plates VI, VII
Fireplace, Merchants' Club - - - - Plate VIII
Perspective - - - - - - - - - Plate IX
Longitudinal Section - - - - - - - Plate IX
Front Elevations - - - - - - - - Plate X
Helmle & Corbett, Architects

THE TOWN SITE OF THE NEW CORNELIA COPPER CO., AJO, ARIZONA
Arcade Around Plaza - - - - - Double Plate XI
Site Plans - - - - - - - - - Double Plate XI
Railroad Depot - - - - - - - - - Plate XII
Store Block - - - - - - - - - Plate XIII
Hospital with Houses - - - - - - Plate XIV
General Office Building - - - - - - Plate XV
William M. Kenyon, Maurice F. Maine, Architects

A GROUP OF HOUSES AT DAYTON, OHIO
No. 7, OFFICER'S HOUSE AND PLANS - - Page 13
HOUSE AND PLANS, A. O. AULABAUGH - - Page 15
No. 6, OFFICER'S HOUSE AND PLANS - - Page 17
HOUSE AND PLANS, P. BARTON MYERS - - Page 19
HOUSE AND PLANS, C. C. BLACKMORE - - Page 21
HOUSE AND PLANS, W. B. PATTERSON - - Page 23
No. 4, OFFICER'S HOUSE AND PLANS - - Page 25
TENANT'S HOUSE AND PLANS FOR JOHN H. PATTERSON - - - - - - - - - - Page 27
Louis Lott, Architect

ARCHITECTURE, edited in the interest of the profession, is published the fifteenth of every month by CHARLES SCRIBNER'S SONS (Charles Scribner, President), Fifth Avenue at 48th Street, New York.

PRICE, mailed flat to any address in the United States, Mexico, or Cuba, $5.00 per annum in advance, 50 cents a number; to Canada, $6.00 per annum; to any foreign address, $7.00 per annum.

ADVERTISING RATES upon request. The writing and displaying of Advertisements is an art in itself, and the publishers will be pleased to give the Advertiser the benefit of an Expert's experience in this line at no additional expense.

Copyright, 1919, by CHARLES SCRIBNER'S SONS. *All rights reserved.*

Entered as Second-Class Matter, March 30, 1900, at the Post-Office at New York, N. Y., under the Act of March 2, 1879.

Bishopric Board makes Stucco finish popular

When a scientifically constructed background for Stucco was discovered—a background that would *clinch* the stucco so it *couldn't* crack or flake off—then the Stucco home led in public favor.

Bishopric Board was "discovered" six or eight years ago and Bishopric Board was the background used in the home of Mr. P. N. Leone at Hartford, Conn., illustrated above, and recommended by Architect R. F. Barker.

Bishopric Board is merely a combination of certain building principles and materials that have been in successful use for untold centuries. It's "Built on the Wisdom of Ages."

Note its construction in illustration below—creosoted lath imbedded in Asphalt Mastic on a background of heavy fibre-board. These materials give absolute protection against heat, cold, wind and weather, and are water, vermin and sound proof.

When applied to Bishopric Board the stucco is dovetailed into the lath, welding them together into one solid piece. The stucco *can't* let go, and the Bishopric Board, securely nailed to the framework, can't sag or break away, thus causing the stucco to crack and flake off.

Build a stucco house with Bishopric Board, using the right stucco mixture, and you will secure in largest measure the qualities of beauty, wear and comfort.

The Bishopric Manufacturing Co.

912 Este Ave. Cincinnati, O.

THE DOVETAILED KEY LOCKS THE PLASTER
BISHOPRIC
STUCCO OR PLASTER
BOARD

Write for our free book "Built on the Wisdom of Ages," illustrating homes, apartments, factory and public buildings finished in stucco on Bishopric Board. It contains letters from architects, builders and users, and extracts from reports of scientific tests. It also gives full instructions for making a stucco mixture that will last. With this book we send free samples of Bishopric Board.

Write today, investigate for yourself, be convinced.

THE BUSH TERMINAL SALES BUILDING AT NIGHT.

From a photograph by J. B. Carrington.

ARCHITECTVRE

THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXIX JANUARY, 1919 No. 1

The Bush Terminal Sales Building

Helmle & Corbett, Architects

By H. S. Gillespie

AN observing foreigner, accustomed to the beauty of European cities, when asked for his impressions of our American product, replied: "Your cities? Oh! they are just streets without ends, buildings without roofs, side walls without decorations, front walls with too much, and tanks, pent-houses, and signs." Was he right? Look up or down one of our principal avenues and answer for yourself. We do not end our streets, we simply let them peter out; we do not roof our buildings, we simply let their topmost "in'ards" remain forever exposed. We leave the side walls, the most conspicuous part of our buildings, to bask in adorned ugliness, while we slather our fronts with every conceivable style (and some inconceivable ones), ranging all the way from the late Adam period back to the Adam and Eve period. If the architects don't know where to put their decorations to have them count, the advertisers surely know where to put their signs to have them read—they use the undecorated side walls for the very simple and common sense reason that in any view up or down our streets side walls are all one sees.

42d Street entrance.

Some future parking commission, some city beautiful committee, may give us endings for our streets and give us an ending of the sign nuisance, too; but in the meantime—a very long and a very mean time, probably—any conspicuous effort to treat all sides of a building with equal interest and provide a real visible roof in the bargain should deserve particular mention.

In the recently completed Bush Terminal Sales Building, in West 42d Street, Manhattan has acquired one of these rare architectural landmarks whose beauty is not likely soon to suffer eclipse. The new zoning law rang the death-knell of the sky-scraper, and there will be no more of these castles in the air, no more at least in the greater city, and if not here, then where else, pray, would any venturesome spirit aspire to produce them?

When Mr. Irving T. Bush, president of the Bush Terminal Company, who, a quarter of a century ago, conceived the idea that later crystallized in the big terminal development now a model of its kind the world over, decided to extend his field of operations in Manhattan and erect a permanent exhibition building where manufacturers everywhere could show their goods in a distinctive and individual manner, he secured the services of Messrs. Helmle and Corbett, of Brooklyn, to design the building. The superb structure, generally conceded to be one of the finest in New York, shows how successfully they fulfilled their task.

Few modern sky buildings of the sky-scraper class presented so many unusual problems in engineering, construction, and architectural treatment. Towering four hundred and fifty feet in the air, the tower portion covers but fifty by ninety feet of ground space, the smallest area of any building in the world for its height except the Washington Monument. To secure a substantial base for this mighty frame it was necessary to go down fifty feet below the street level before proper foundation was reached. Although the present building extends through the block to 41st Street with a nine-story extension over the rear portion, the building operation started on the front lot only and all the material for the entire tower was brought to the building through 42d Street, one of the busiest thoroughfares in the city, where traffic is never suspended night or day. It would seem as if the work of construction would have been hampered to an almost unbelievable extent under the restricted means of access, and yet, by having the steel for the structure fabricated, the stonework, brick, and terra-cotta in the yards ready for delivery before the foundation was finished, there was no delay whatever caused by lack of material nor any blocking of traffic either on street or sidewalk.

The unusual engineering feature of the work was to

Staircase gallery, second floor.

Detail, third floor.

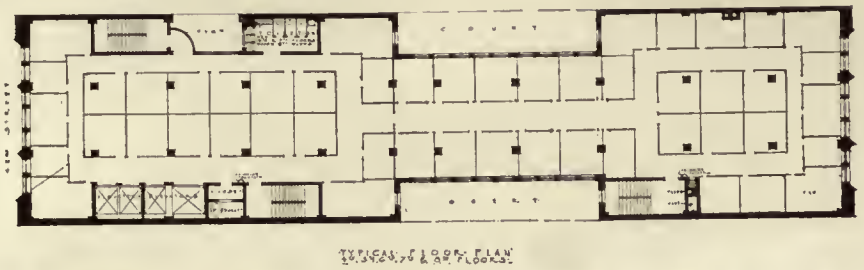
provide proper resistance to the overturning movement of the wind. This great strain naturally came across the fifty-foot width of the building, and there being no interior partitions in which to conceal diagonal struts, heavy reinforcements with strong knee-braces at the column points had to be introduced. Also the necessity in the plan for a wider space at one point on the three lower floors than was possible to get between the regular column spaces was another problem that came up for solution. Two columns, carrying a total of one thousand three hundred tons, resting on a pair of cross-girders seventy-two inches deep with a seventy-five-foot clear span, were added on the fourth level to meet this contingency.

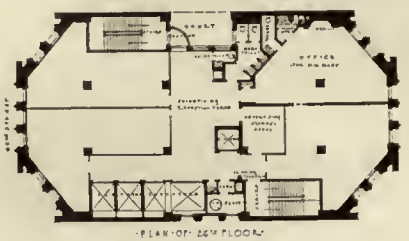
Since any building ten times higher than it is wide is actually a tower, some special treatment of the upper portion was obligatory to give it the appropriate finish, and the tanks, chimneys, and pent-houses which disfigure the tops of most of our buildings had to be concealed within fittingly proportioned walls. In deciding upon a style of architecture for the building, the choice lay between one that would exaggerate the height or one that would diminish it. Distinction in building, like distinction in dress, comes from accentuating the natural peculiarities rather than in concealing or belittling them, so the Gothic was selected as the inspiration for the architectural treatment, although it is handled with a remarkably modern touch.

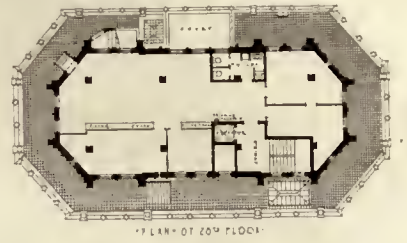
The excavation.

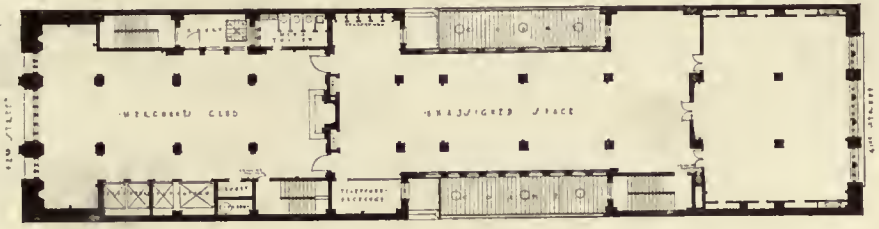
Built in the centre of a block, the side walls are blank as to windows, and no space could be sacrificed here for reveals, nor could any encroachments on neighboring property for projections be permitted. Yet these side walls were as conspicuous a part of the building as the front, if not more so, and some form of architectural embellishment that would bring them into harmony with the front, to dress them up, so to speak, and make them, with the front, an architectural unit, was demanded.

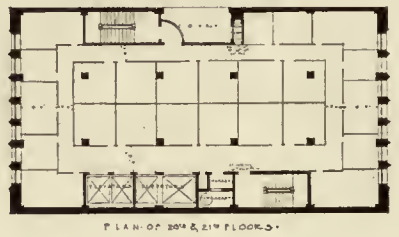
Since cornices or projections of any sort were not permissible on the sides, a scheme of design was chosen which required no projections on front, rear, or sides. Reveals, too, were impractical on the sides, so some device had to be discovered by which reveals could be simulated without sacrificing space or incurring undue expense. By the judicious use of a little "architectural camouflage," the colors being supplied by three tones of brick, the desired effect was obtained, and an entirely new and original treatment of side walls, so painfully neglected in most of our buildings, was evolved. Black brick was used for the shadows and white for the high lights, the result being quite as effective as

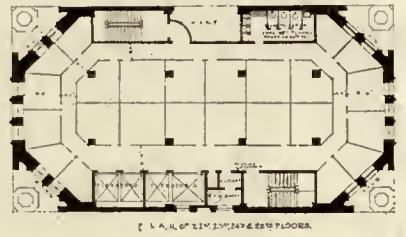


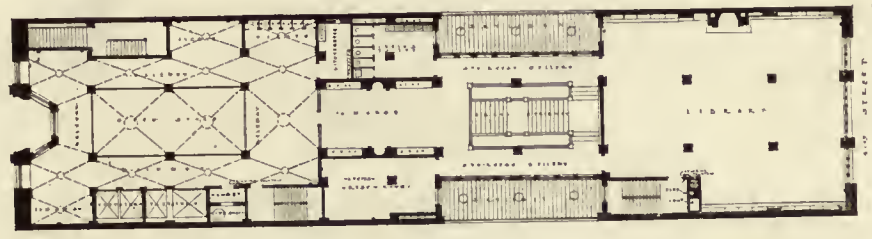


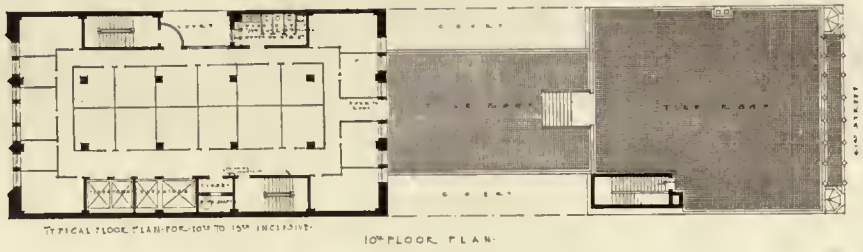


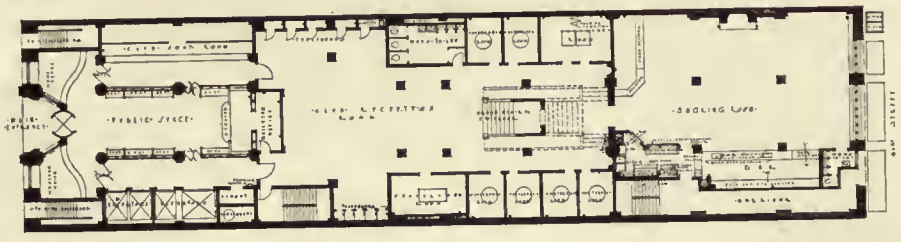


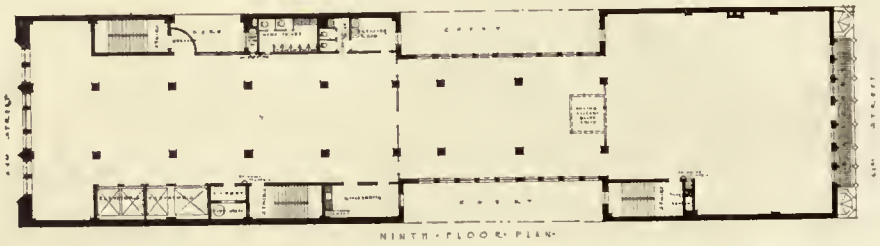


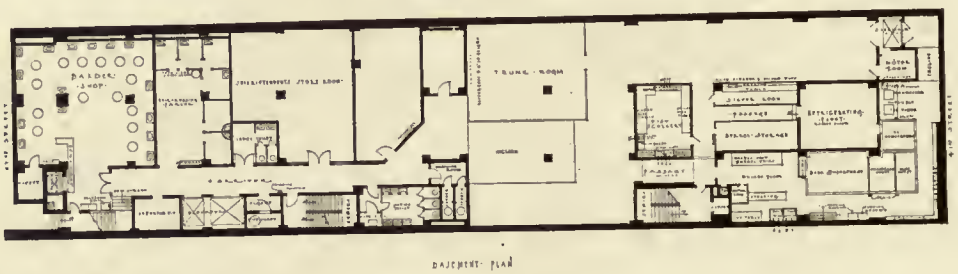












PLANS, BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK.

Helmle & Corbett, Architects.

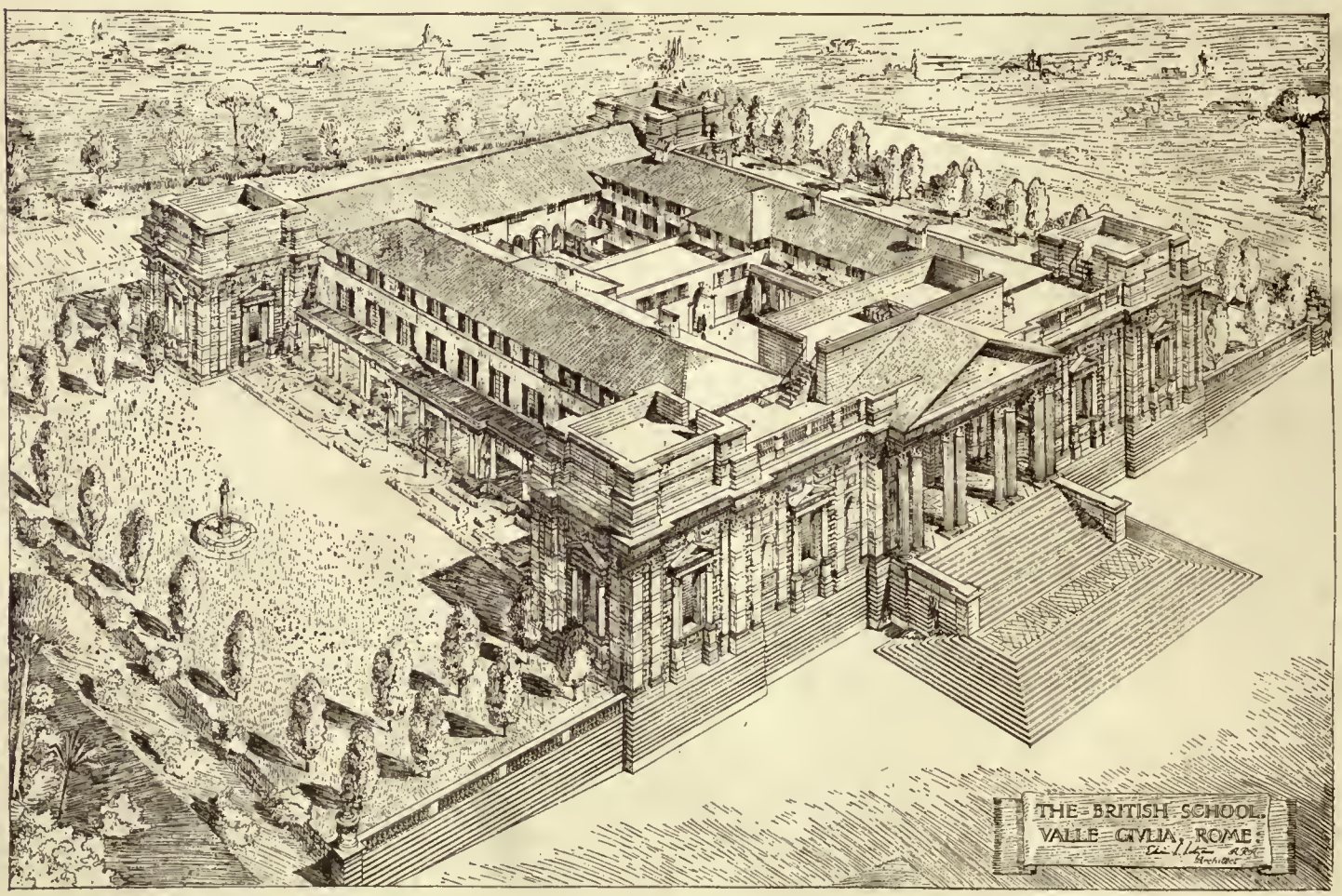
though the accustomed architectural embellishments had been used, the light and shadow effect being worked out to correspond with the natural average angle of the sun.

The individuality and distinctive character of the building does not stop on the outside. The interior is quite as unique and original, and here again the plan, as well as the decoration, follows absolutely unconventional lines. Every floor above the third is an open exhibition space, divided by low rails, glass partitions, or booths, where the buyer can find every manufactured article under the sun on display and make his selection accordingly. The ground and second floor are for an International Buyers' Club, furnished and fitted like an old English manor-house,

Smoking-room.

with a delightful background of panelled walls, beamed ceilings, and Jacobean furniture. A grand main entrance rising two full stories in height, with a richly carved ecclesiastical setting, is the *coup de grâce* of the building, establishing at once in the mind of the visitor the correlation between its Gothic exterior and the fifteenth-century environment of the club-rooms.

Perhaps the most striking feature of the interior, both in the floors of the club and the merchants' exhibition floors as well, is the quiet harmony in color and the pleasing variety in the use of materials. In fact, the same distinctive note of complete unity which is so remarkably conspicuous in the entire exterior treatment has been carried into the interior with unusual skill and success.



The Spirit and the Letter—Can There Be a Typically American Architecture?

By David Varon
Architecte diplômé, Author of "Indication in Architectural Design," etc.

THE wrecking of Rheims Cathedral and many another jewel of the same class, the losses of which will be moaned long after the war is forgotten, has on the one hand widened the gap between the civilized world and the vandals, and on the other it has brought Gothic architecture into the lime-light as never before.

So much has been written on this subject by men both inside and out of the arts that it almost requires a special knowledge to find one's bearings in this flood of literature, much of which is very superficial and imbued with a spirit of pure partisanship. It is well for the scholar to discriminate between the genuine and the imitation, between the true and the false prophets.

It is with architecture as with music. No matter how many books are written on the subject, without the orchestra, the fine organ, or the star soloist all the books are vain efforts. Likewise, without having seen genuine Gothic churches on the very spot where the style was born, the judgment one would form of the style would be very similar to that one might form of foreign operas wailed out by the hurdy-gurdy.

No one who has visited some of the wonderful monuments of the best period of Gothic architecture can deny the deep impression they leave on the mind. Humanity will for many centuries to come feel indebted to the religious as well as civil structures of those times, be they looked upon from the intellectual, æsthetic, or spiritual points of view. To those interested in the history of architecture, particularly with a view to studying the process of the making of a style, there is hardly any better school. Every stone or brick of its productions is a clear demonstration of what architecture ought always to be—construction made decorative. There is hardly any architectural ornament in that style but has some sort of *raison d'être* structurally. "The function should create the form" seems to have been the motto.

After having visited churches, monasteries, town halls, and courthouses, all of the best Gothic period, all brimming with a beauty of their own, one feels no surprise at the attempt made to revive the so-called Gothic architecture. The idea has found many partisans devoted to it even to the point of fanaticism. They declared that a church could not be a real church unless built in the Gothic style. The Beaux Arts school had to sustain many an attack for its not giving the study of the architecture of that epoch a pre-eminent place. It was considered little short of a crime on the part of an art institution to show such neglect and to "forget that many churches are still to be built."

Undoubtedly the intentions of the revivalists were very noble, only they mistook the letter for the spirit. Paraphrasing the saying "Hors l'église point de salut" they made it "Hors le gothique point d'église." Now, if art means anything it is the reflection of life itself. The monuments of the age we have been referring to conform strictly to that definition of art. Their authors did not resort for their decoration to obsolete forms and symbols, but rather to those well expressive of the ideas which were familiar to the masses who knew the folk-lore. In that folk-lore we must look for the source of inspiration of the devilish forms of those gargoyles so characteristic of the time. To these symbols are attached popular beliefs and superstitions. Whether those were signs of low or high culture, pure or crude belief, is now out of the question. Suffice it to say that the artist strove to assign them a place in the elements he used for his decoration, thus attracting the attention of the man in the street in a forceful manner. The ideas of the last judgment then current among the people, the reward of the just and the punishment of the wicked, were the most usual themes resorted to by the sculptor. It all was naïve and understood by all.

Let us, if you please, revive the enthusiasm which made, in those times gone by, the layman take a deep interest in what was going on in the artistic spheres, and consider the outside of his town hall or his market little short of a poem or a song—and he knew a good many of them. Let us, drawing inspiration ourselves from the *spirit* of those times, encourage the culture of the beautiful and a more intelligent love of nature which is the best source of true poetry. Let us so formulate our programmes of education as to gradually create the craving for purer art and reach the moment —a happy one—when the majority of student architects will go into architecture not because "it pays" but because they feel it to be their calling. Commercialism and "arrivism" are the two sores that just at present affect greatly our profession.

Many took the stand that everything in Gothic architecture is perfectly rational. In this respect it is interesting to see what was thought of the whole system by the late Julien Guadet, one of the foremost teachers of architecture at the Ecole, whose book, "Theory and Elements of Architecture," gave him a world-wide reputation. The chief characteristics of that master were his common sense, his conscientiousness, and his broad-mindedness. Winding up one of the chapters of his book, in the third volume, which deals mainly with ecclesiastical architecture, and speaking of the Gothic church, here is his judgment:

"Here, then, you have the flying-buttress type of a church, which type was general from the thirteenth century on. I spoke to you of the naves, mainly on account of their justifying the rest of the composition. But all that precedes holds good with any part of a church having side aisles, transept, etc.

"The flying buttress, you can readily see, is the mainspring of all these compositions. This architecture is based upon the permanent propping-up process accepted as a means of securing definite stability. This is what makes both the originality and the unremitting servitude of this theory. Let us then examine the strong and the weak points of the flying buttress, its advantages and its dangers, for the judgment we shall pass on it will apply to the religious architecture of the Middle Ages.

"Assuredly, the conception of the flying buttress is a bold one, almost paradoxical. As it is with everything, it came by degrees. To-day, after we have seen it so often, we have grown used to it, and it fails to impress us with surprise. We hardly look at it. But suppose for a moment

that, running contrary to all traditions, they should build, all on a sudden and for the first time, an edifice so propped up; take, for instance, Notre Dame as it is seen from the 'Ile St. Louis.' What would the impression be? Astonishment first, and then a hard resistance. The mind accepts readily what is natural and simple, but does not yield without a struggle to whatever runs against nature; it does not admit from the first onset the necessity of props for the rising structure, still less will it accept that these props serve as the permanent means of assuring the durability of the edifice. These props, or crutches, would give the spectator the impression of an irretrievable infirmity, the treatment of which is of the province of 'monumental orthopedy.'

"But if one should enter the building he is entranced at the sight of the lofty naves, the aerial vaults, the great traceries, the superimposition of all that over thin, slender piers, dividing the various parts of the church without causing obstruction, the depth and the variety of the different aspects, the surprising impression of the overcome difficulty, the realization of the unattainable, the mixed triumph and mystery. He could account for all that only by a prodigy or a miracle, for the spectator could not see from within the ransom he has to pay for all this beauty. And then I imagine an extremely sensitive pair of scales—on one the splendors, on the other the weaknesses. Which shall win out? The appreciation of the religious architecture of the Middle Ages has greatly varied. From the Renaissance up to the beginning of the nineteenth century people couldn't see in it but barbarism and ignorance. More recently they saw only its magnificences, admiring even its imperfections. Truth—as ever—is between both exaggerations.

"One must admire the very skilful combinations of equilibrium and the results produced; but one must likewise admit the daring side of the expedient—I do not take the word back—which form its mainstay. Look, for instance, at Notre Dame; should only a stone fail in one of the flying buttresses, and there comes the collapse of the entire structure. Even though all should be perfectly figured out, nevertheless the very existence of the whole structure depends upon the durability of the flying buttress, a frail element exposed to the destructive causes inherent to the weather and other contingencies. Here is a body the vital organs of which are on the outside. That which is most indispensable to its life is the most exposed."

How lucid the above criticism is and how fair! Gaudet admires what is admirable, but he does not want to accept as permanent that which has the appearance of being temporary. Probably had those artists had at their disposal the same sort of materials which we have to-day, our means of reinforcement and our fine cement, those flying buttresses, looked upon with so much sense of religion, would never have come to life.

It is about time we should see that the beauty of the Gothic architecture lies neither in crockets nor in flying buttresses—no matter how ingenious the contrivance be—in pinnacles nor in gargoyles, but in its proportions, which proportions were observed by the authors of St. Eustache, that other famous Paris church, but of the Renaissance style. They preyed on the secret of the beauty of the churches built in the preceding centuries, and while they adopted the Gothic skeleton they clad it with Renaissance forms and ornaments. Those proportions were the real invention of the Middle Ages. All the rest, as says Guadet, was justified by them. Many a disillusioned student coming back from St. Peter's of Rome, so huge in size, is glad to refresh himself in Notre Dame, and as well in St. Eustache, and to see a composition that looks bigger, even though it is much smaller than St. Peter's. In the Gothic church, and as well in St. Eustache, the student can easily discover for himself the law of scale, the thorough mastering of which means so much in architecture, and the understanding of which has baffled the earnest efforts of so many until they could see no longer mere images but actual monuments.

Yes, indeed, let us revive by all means the *Gothic spirit* of the days when youths would gladly walk from their distant town to Paris, to get first soaked with beauty and then beg for admission in one of the many building corporations; that spirit which enabled the apprentice to stand all the hardships attending the years of preparatory work sustained only by the dream of achieving, in turn, some day a masterpiece like the master's, and if possible outdo it.

With the talent I have observed in our colleges of architecture, with the variety of modern programmes, the wide range of materials, the splendid development of the art of building, what do we need for the attainment of that supreme goal so much longed for—the creation of a genuine American style? The question is a very serious one and could hardly be solved while standing on one foot. I could not even approach the outline of a possible solution within the limits of this writing. However, we may from the foregoing derive some conclusions: First and foremost, we should be able to look upon everything with unbiassed minds. Thus, being not quite intimately familiar with the spirit of the Ecole, we can hardly understand it, and when we attempt to pass a judgment on its methods we are bound to fail, because our criticism is based on superficialities—the letter. A serious survey of those methods will prove that they answer the local purpose to perfection. If those methods cannot succeed when transplanted and subjected to a process of hot-house culture, why blame the Ecole for the fact?

Secondly, a style cannot be artificially forced upon the public. The style of an epoch must be directly correlated to its contemporaneous life. Do not we have our modern geniuses and their respective achievements to celebrate and commemorate? Is not the source of inspiration, nature, still brimming with the eternal principles of the beautiful? Is not the fountain of youth eternal? On the other hand, while nature is *one*, is there not a variety in this *oneness?* The survey of Gothic architecture shows at once the splendid working of this principle of variety in unity. Thus, while the Greeks and Romans delighted in the acanthus leaf, the Middle Ages turning to the local flora did wonders in the line of conventionalization.

If the devotees of Gothic architecture want to be true to themselves, they ought to apply the same spirit of worship and admiration to our local vegetal elements, with a view to making use of them in the decoration of our structures, as did those who borrowed the cabbage, the cowslip, and other plants for their decorative value.

Thirdly and lastly, a single moment of consideration shows us that the Middle Ages, whether they sought it or not, were individualists. Having problems to solve, they did not spend their time studying archæology, but, daring to be themselves, units of their time, faced those problems with an utter independence. Deep logic, a genuine love of the beautiful, and a sincere respect for the life of their contemporaries—this is what made them famous. They had the spirit.

The Town Site of the New Cornelia Copper Company

By William M. Kenyon

ARIZONA early gave indications of great mineral resources, and became an attractive field for prospectors and adventurers, although the hardships of the desert added many true stories of tragedy.

It is said that Tombstone, without which no story of Arizona is complete, received its name from a prospector who had heard of a fabled deposit located near the fastnesses of Gerónimo. When it became known that he was going in search of the fabled Eldorado, he was advised to take his tombstone with him.

EARLY MINING IN ARIZONA

Ajo plant of New Cornelia Copper Company.

Whether or not this prospector was successful, soon the little settlement became one of the greatest mining centres of the West. Shafts were sunk, mining-machinery was imported from Spain and drawn overland after overcoming tremendous difficulty and hardship, and Tombstone, with its saloons and dance-halls as well as its opportunity for adventure, became one of the liveliest spots on the map.

To-day, although many of the old deserted buildings still stand, and some of the old Spanish mining-machinery is at the mouth of the shafts of the mines, the town is as dead as its name, and the lure of other days is gone.

Ajo, meaning "garlic," in the early days was a collection of a few adobe shacks in a sandy desert country, surrounded by the mountain ranges in a southwesterly part of the State of Arizona, and about forty miles north of the Mexican border. It is difficult to imagine the existence of human beings in a country so desolate, with no vegetation but the mesquite, ocotillo, greasewood, and the various members of the cactus family.

AJO, THE OLD TOWN

Although there are deer and some other game in certain parts of Arizona, the principal game in this valley are rattlesnakes, tarantulas, scorpions, hydrophobia skunks, Gila monsters, and many other specimens of a similar disposition.

The water-holes were few and far between, and the water was used sparingly and only for drinking or culinary purposes.

The usual Mexican or Indian residence or settlement can be detected without great difficulty by other means than sight.

As with other settlements, legends had located valuable mineral deposits in the valley. After finding some gold in the washes from the mountains in the black sands of the arroyos, the adventurers became discouraged, and only the legends remained.

AJO, MINING PROSPECTS

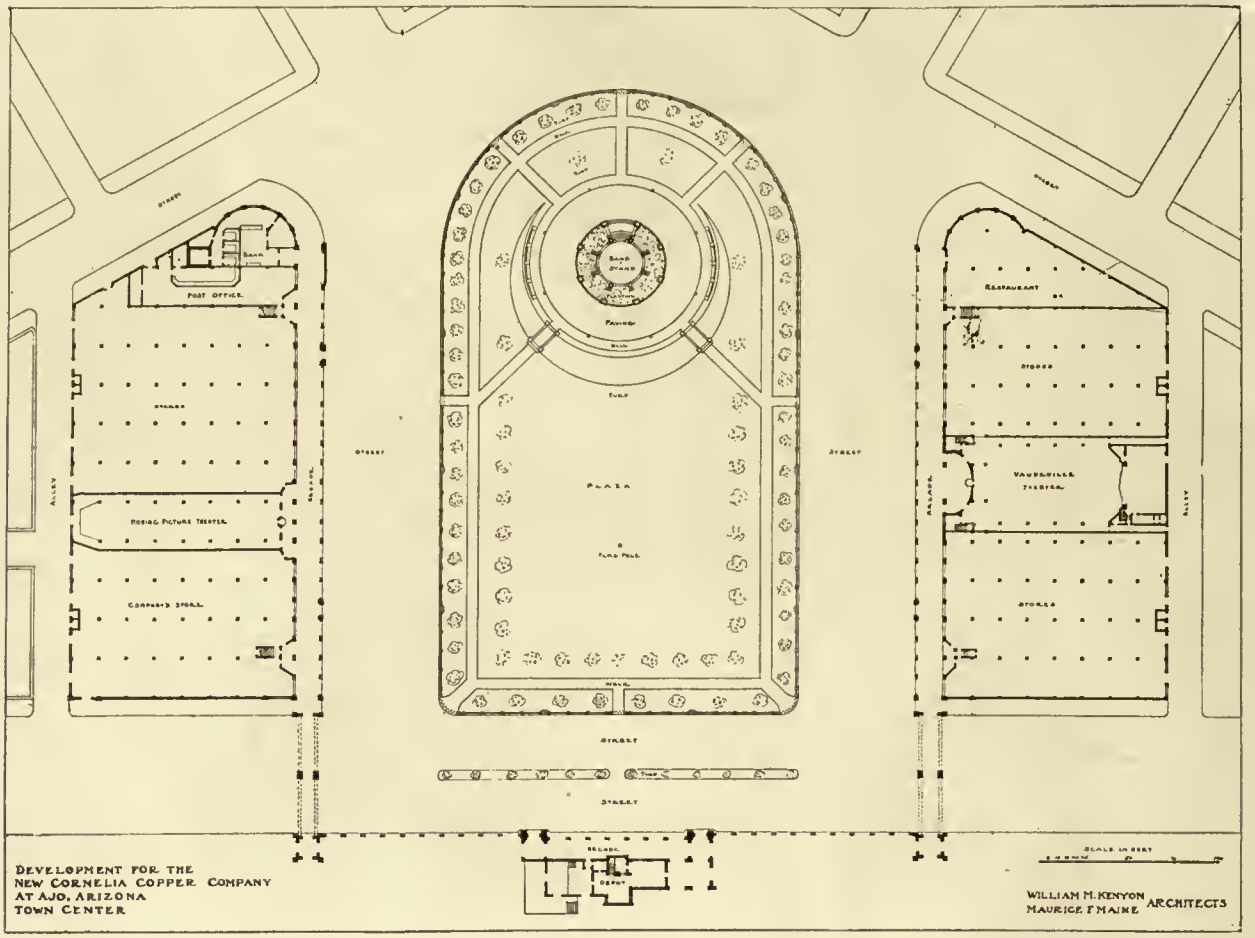
After the early-day methods of prospecting for ore had been superseded by more modern and scientific methods, it was discovered that a great body of a low grade of copper ore composed three towering hills at the edge of the range on the westerly side of the valley. For many years the deposit was considered valueless, as there were no means of reducing the low-grade ore on a profitable basis, and the physical obstacles made the situation anything but attractive.

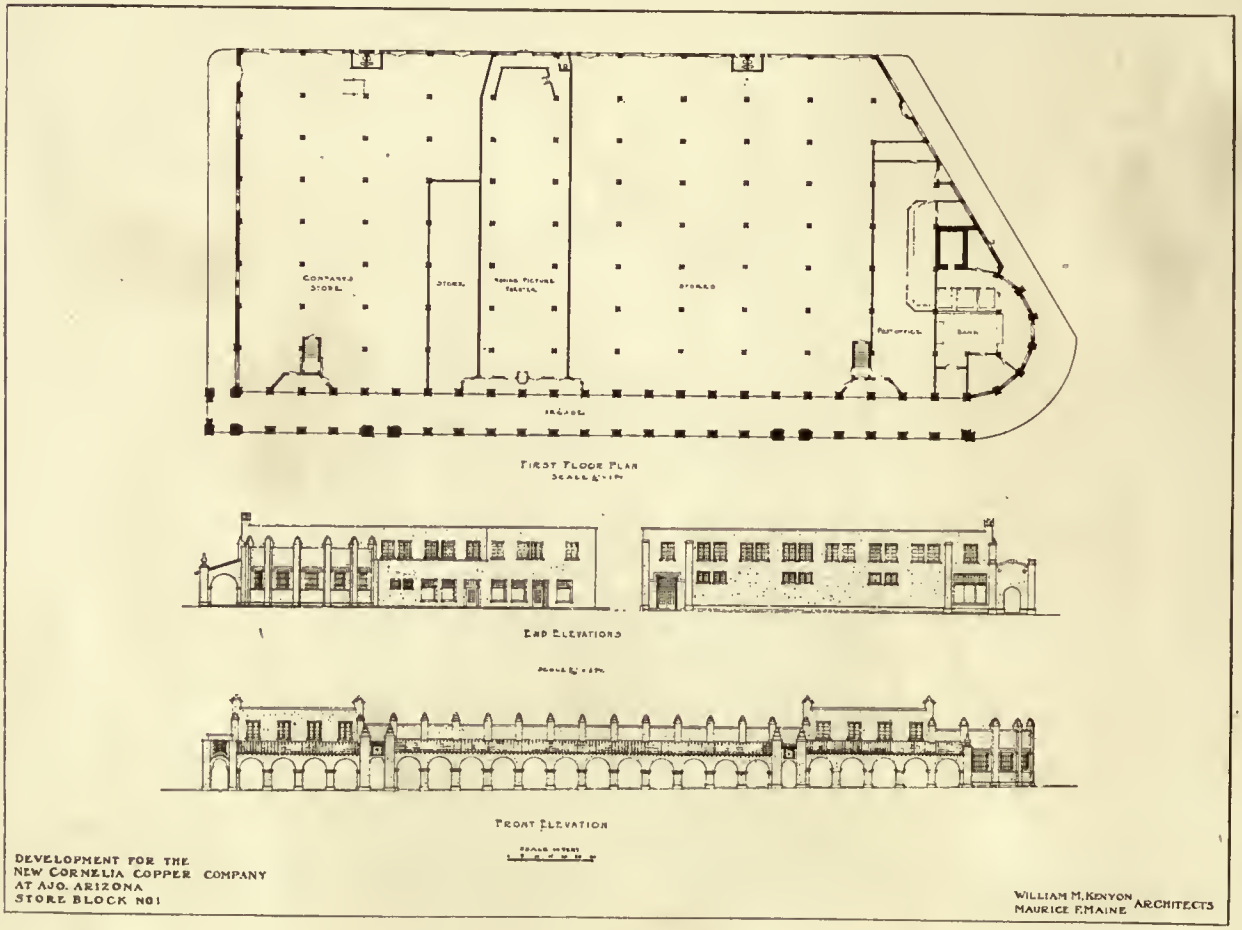
AJO, DEVELOPING THE ORE

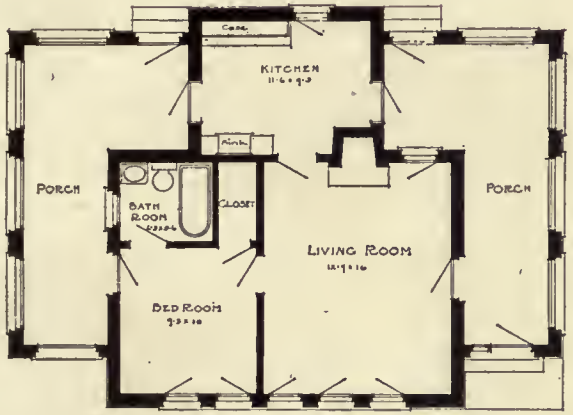
Detail of construction.

Finally, some time after the electrolitic process of reducing copper ores was invented, the long-fabled ore deposits were acquired and surveyed. Expert geologists, after many months of work under the most trying conditions, announced forty-three million tons of low-grade, or oxide ore.

Being forty miles from the nearest railroad, with practically no roads but trails through the desert, the next problem was to determine the practicability of mining the ore and of installing the machinery necessary to reduce the ore. Finally, a small plant capable of crushing and re-

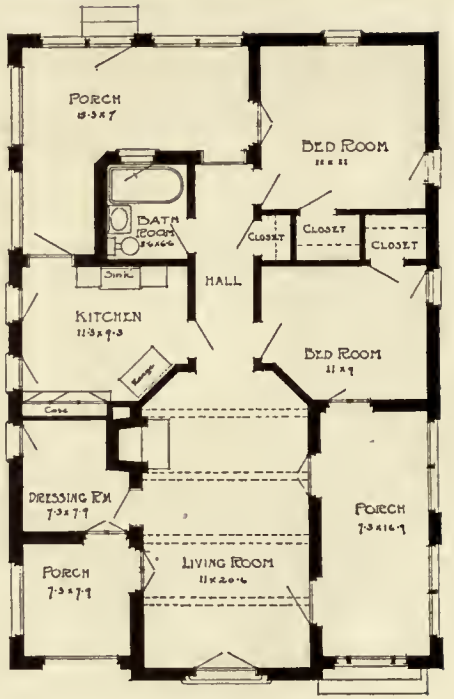

DEVELOPMENT FOR THE
NEW CORNELIA COPPER COMPANY
AT AJO, ARIZONA
TOWN CENTER
WILLIAM M. KENYON
MAURICE F. MAINE
ARCHITECTS


FIRST FLOOR PLAN
END ELEVATIONS
FRONT ELEVATION
DEVELOPMENT FOR THE
NEW CORNELIA COPPER COMPANY
AT AJO, ARIZONA
STORE BLOCK NO 1
WILLIAM M. KENYON
MAURICE F. MAINE
ARCHITECTS



FLOOR PLAN AMERICAN HOUSE NO3

FLOOR PLAN AMERICAN HOUSE NO9



FLOOR PLAN AMERICAN HOUSE NO.13

AMERICAN HOUSES, TOWN SITE OF THE NEW CORNELIA COPPER COMPANY, AJO, ARIZONA.

Wm. M. Kenyon, Maurice F. Maine, Architects.

Detail of construction work.

ducing one ton of ore per day was installed. From the experience gained in operating the small plant, a two-ton plant was installed with such improvements as seemed necessary.

In the meantime rumor had magnified the old legendary story, and the population of Ajo increased rapidly.

The type of architecture of the business buildings and dwellings was of the same general character, and ranged from packing-boxes and burlap bags to empty gasoline-cans pounded out flat and secured to whatever vertical or horizontal supports were at hand. The effect was picturesque in the extreme and was obtained at a very moderate cost. The interior decoration and furnishings of such homes depended, of course, upon the individual taste of its owners. However, the young Papago Buck, with a tin can or coffee-pot as a nucleus, had little difficulty in acquiring all of the other decorations, which usually consist of the squaw and babies.

Mexican houses.

With the success of the experimental plant, there came in the great minds of the men who had spent thousands of dollars in experiment a dream of a successful plant and a return on the millions of dollars which would be required to carry out the project.

AJO, BOOM TOWN

This would require railroad and equipment, big stone-crushers, sludge-tanks, leaching-tanks, power-plant, water-supply, sewerage, roads, homes, business and public buildings. With the start of the railroad came the real boom town of tents and shanties.

This was followed by two other boom towns immediately adjacent to the company's property.

Ajo had become a place of considerable importance, and, although dry by law as well as by nature, still there was some of the sentiment and atmosphere of the early mining towns.

At an expense of over $11,000,000, the plant was finally completed. This followed an expenditure of other millions of dollars for the construction of a railroad and equipment.

AJO, THE NEW TOWN

In the meantime, three town sites had been planned and laid out on the company's property: One town site for the Papago Indians and one for Mexicans, who comprised the labor element in and around the mines and plant. The third town site was for the whites, who comprised the skilled mechanics and trades, the clerical, the executive, and administrative.

No immediate water-supply being available, wells were sunk seven miles away and the water piped to the new town site. Sewerage-pipes were laid, electricity generated at the plant, and a telephone system installed. Homes, business and public buildings were built with an opportunity for future development and growth. Notwithstanding the scarcity of water, a little park was created with its bandstand in the centre.

Buildings of all characters are constructed of fireproof materials, thoroughly sanitary and modern in every respect, and what was once the desert and a legend has developed far beyond the wildest dreams of its creators.

No Medals for Builders This Year in New York

Year's Construction Produced No Examples Worthy of Merit

FOR the first time since the custom was established of giving special recognition to construction and architectural design, the Fifth Avenue Association announces that there will be no medals or certificates awarded this year.

The Association's committee on architectural harmony found no subjects to consider, thus pointedly reflecting the effect war restrictions have had upon general building.

H. Van Buren Magonigle, Thomas Hastings, and Egerton Swartwout, technical members of the committee, after considering all buildings presented by the Fifth Avenue Association, reported that it was the unanimous opinion "that no work, either new or alteration, done during the year is in a class which should make it worthy of the distinction of having medals of honor awarded to it."

The lay members, Walter Stabler, Ensign Douglas L. Elliman, and Michael Dreicer, concurred in the findings of the professional members of the committee.

Editorial and Other Comment

The 1919 Outlook

THERE seems to be no doubt whatever in the minds of those who are in close contact with problems of future building construction that a mood of optimism is justified by all the present indications. From all sides preparations are being made to take up the work of building much-needed apartment-houses and dwellings, the alterations of hundreds of old city houses into small apartments, the conversion of industrial plants that have been given to war work into the production of things that are greatly needed in these new and cheerful days of peace. There are hundreds of factories to be extended, new banks to be built, new housing developments to be carried on by private enterprise, public buildings, schoolhouses.

No doubt the great need of American materials for reconstruction work in France and Belgium will tend to maintain high prices, but this has been anticipated and apparently will not make any difference in the general situation or delay progress.

There Will Still Be Architects

"It is rather difficult nowadays to pick up any periodical, attend a meeting, or do anything which has any relation to the practice of architecture and not come upon a general atmosphere of something more or less wrong with either the public, or Uncle Sam, or the present theory and practice of architecture as the practitioner knows it or the architects themselves. One is almost tempted to question the justification of an architect's continued existence as such. Almost any sort of question and answer seems to find full warrant, for, while on the one hand, architects seem moderately and modestly to have been justified in their existence before the war, still, since the war, the justification has been neither moderate nor modest."

THE above quotation is from a most interesting and suggestive letter written by a well-known architect of the Middle West. It is expressive of the mood of the times, of the general feeling of uncertainty as to the future; but somehow we feel that the profession is going right on. Maybe with newer ways in the conduct of business, with a greater concentration of resources and a closer co-ordination between the artistic and practical branches, but, nevertheless, right on. And we are inclined to feel, too, that instead of constant bickerings, of pessimism and discouraging criticism, it might be well to try to arrive at some determinative position, some carefully adjusted information of what needs to be done to restore confidence and to insure some measure of success for every architect worthy of the name.

Hard times test men's souls—we mean character—and a little discipline after days of prosperity is sometimes the only way to make us take stock of our real qualifications and to get down to brass tacks, to inventory and measure ourselves, come to some conclusion as to why we fail and why others succeed. We must never quite discount or fail to appreciate the intangible but effective personal equation that so often makes or mars success in any field of endeavor. The lines from "Julius Cæsar" from which Barrie derives the title for his new play, "Dear Brutus," might be cast in bronze, carved in stone, or modelled in terra-cotta over the doorways of many offices in many professions:

> "The fault, dear Brutus, is not in our stars,
> But in ourselves, that we are underlings."

The Status of the Profession

EDITOR ARCHITECTURE,
Fifth Avenue at 48th Street,
New York City, N. Y.

Dear Sir: There has been much letter-writing and comment published in most of the architectural journals of today with regard to the future of the profession of architecture, some good and much bad, but all of which is disturbing the status of the profession very materially.

In the various articles we have been styled as architects, architects and engineers, and one has gone so far as to prophesy that we are to become master-builders, embracing every phase of designing and building.

There are those who are beginning to question whether architects are necessary at all, and it seems to the writer that the discussion has gone about as far as it should without some definite understanding and action on the part of the architectural societies at the earliest possible moment, in order that conditions, which may confront the profession and the public in the very near future, might be approached with some unanimity of thought and action, that the future of the profession be definitely defined, that architects may all approach the after-war condition with a definiteness and a conviction that will carry with it a certainty that the profession has a definite future.

In view of the fact that several States have defined architecture by registration or license law, it would seem that any decisive action as to the future status of the profession should be had this coming winter before the meetings of the legislative bodies in several of the States of the United States have adjourned.

Yours very truly,
EDW. C. VAN LEYEN.

Let the Government Finish the Work

The Great Loss Involved in the Sudden Stopping of Government Housing Projects by S. J. Resolution 194

THE Senate passed, on December 12, the above numbered Resolution directing the U. S. Housing Corporation (Bureau of Housing and Transportation of the U. S. Department of Labor) to stop all work on all government housing projects that are not seventy-five per cent completed and to cancel all contracts in relation thereto.

This resolution was adopted by the Senate upon the ground that it would save money to the taxpayers of the country, a purpose that every one is in sympathy with.

The action taken, however, is not well considered. It is opposed strongly by the officials of the U. S. Housing Cor-

poration, who had already of their own volition before Congress acted, stopped all work and terminated contracts wherever, in their judgment, there would not be permanent demand after the war in peace times for such housing projects, and therefore the money could be saved to the country. On the signing of the armistice on November 11, 55 projects were abandoned, 14 projects were curtailed, and 20 only are proceeding as planned. The projects cancelled involved the expenditure of over $17,000,000, at a loss of about $4,000,000. The projects cancelled without loss involved about $5,450,000, and the projects which were curtailed have been reduced in cost from $17,000,000 odd to $11,000,000. In addition, approximately $20,000,000 worth of housing which was ready to submit to contractors was voluntarily abandoned by the U. S. Housing Corporation.

The contracts that are being proceeded with, therefore, represent the well-considered judgment of Mr. Eidlitz and his associates as to the projects that should be proceeded with and completed in view of peace-time needs.

It is now proposed, however, arbitrarily by Congress, without full information, or without complete knowledge of the facts, to discontinue all such projects, and halt them in midair irrespective of the state of their progress, unless they happen to be seventy-five per cent completed, or more.

It is very similar to a situation where a private individual has ordered a suit of clothes to be made for him. He finds that the coat is two-thirds finished, the vest is half completed, and the trousers are about one-quarter done. He thereupon tells the tailor that he has changed his mind and doesn't want the suit, and to stop all work on it, with the idea that the tailor can sell the suit in that uncompleted form for what he can get for it. The absurdity of this kind of arrangement is at once obvious. The market for uncompleted buildings is not much better than it would be for uncompleted suits of clothes. The practical thing, of course, for the government to do is to complete those projects which should be completed, and then dispose of them under a well-considered plan upon such lines as may be worked out by the U. S. Housing Corporation officials and by Congress.

To arbitrarily stop these projects in midair without consideration of the loss involved to the community, the interference with the contracts for the installation of public utilities, such as water, gas, lighting, and sewers, etc., is reckless, to say the least.

America the Melting-Pot of Architectural Styles

THERE is a question that arises just now in connection with the fact that several hundred thousand Americans (our army) have had their vision and knowledge considerably enlarged by their acquaintance with foreign war lands.

Not least of the things these Americans will come to appreciate will be the architecture that they see there. What will be the influence, then, after the war, on American architecture, when tens of thousands of these men, returned to their own country, in years to come become clients and "prospects"? It is obvious that the favorable impressions of European architecture will be reflected in a desire for something similar, or in the same spirit, in this country. These clients of the future, not to speak of returned architects, draftsmen, and others, will largely inject a new influence into American architectural development.

Already the "melting-pot" of world races, this country will become even more than it already is, the melting-pot of architectural styles. The chief difference in the influence will probably be that the new desires will be along simpler, domestic lines; for these soldiers will not be making the "grand tour," and will be in more intimate contact with the real architecture of the French people, say, instead of, as the wealthy tourist and student formerly was, in contact with the grand and monumental works of architecture, mainly. This means a cessation of monumental treatment of ordinary American architecture and the coming in of simpler, severer, more natural solutions of problems.

All in all, another decade will witness some radical differences in the direction of American architecture, due entirely and solely to the war, not only in waste-prevention, construction methods, ethics of practice, construction management, planning, and general raising of efficiency due to war lessons, but in that intangible something called style—an art spirit entirely unlike anything that has gone before, just as the American race is itself a different race from all others, yet combining the characteristics of them all.

An attribute of genius is said to be the ability to assimilate the ideas of others, fuse, cohese, recombine, and issue them forth added to, improved, unified and perfected. And one prominent New Orleans architect maintains that the American architect exhibits this trait of greatness—the ability to "swipe" essentials and to so recombine them as to result in a product greater than the sum of the originals. Hitherto this "swiping" has been confined to monumental works of the past, but it is probable that the era now being ushered in will see this first phase influenced by an infusion of the lesser works of domestic architecture visible in Europe, and the result will be worth waiting for.

From "Building Review," New Orleans.

Examinations for Architects in the State of New York

THERE will be two opportunities during 1919 for architects to be admitted to practice in New York State by examination. Examinations held in various cities will be open to candidates who shall have previously qualified, on January 29–February 1, and on June 1–3. Candidates should write at once for information to the Examinations Division, Education Building, Albany, New York. Those who wish to take the examinations will be required by the Regents to qualify under the law which specifies that the applicant shall have "satisfactorily completed the course in high school approved by the Regents of the university, or the equivalent thereof, and subsequent thereto of having satisfactorily completed such course in mathematics, history, and one modern language, as are included in the first two years in an institution approved by the Regents, conferring the degree of Bachelor of Arts. Such candidates shall in addition submit satisfactory evidence of at least five years' practical experience in the office or offices of a reputable architect or architects, commencing after the completion of the high-school course. . . ."

Candidates may obtain copies of the Registration Law and an outline of the examination by addressing Dr. A. S. Downing, Assistant Commissioner for Higher Education, Education Building, Albany, New York.

Architects who have graduated from certain schools of architecture, and those who have practised ten (10) years in other States, may secure certificates of registration without examination. It is illegal for any one to use the title "architect" in this State without registration unless he actually practised architecture in New York previous to April 28, 1915.

THE BOARD OF EXAMINERS AND REGISTRATION OF ARCHITECTS.

D. EVERETT WAID, *President.*

WM. P. BANNISTER, *Secretary.*

Education Building, Albany, N. Y.

DETAIL IN ENTRANCE LOBBY, BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK. Helmle & Corbett, Architects.

ENTRANCE LOBBY, BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK. Helmle & Corbett, Architects.

MAIN RECEPTION-ROOM.

BUSINESS LIBRARY.

Helmle & Corbett, Architects.

BUSH TERMINAL SALES BUILDING, WEST 42d ST., NEW YORK.

Helmle & Corbett, Architects.

STAIRCASE CONNECTING FIRST AND SECOND FLOORS, BUSH TERMINAL SALES BUILDING; WEST 42D ST., NEW YORK.

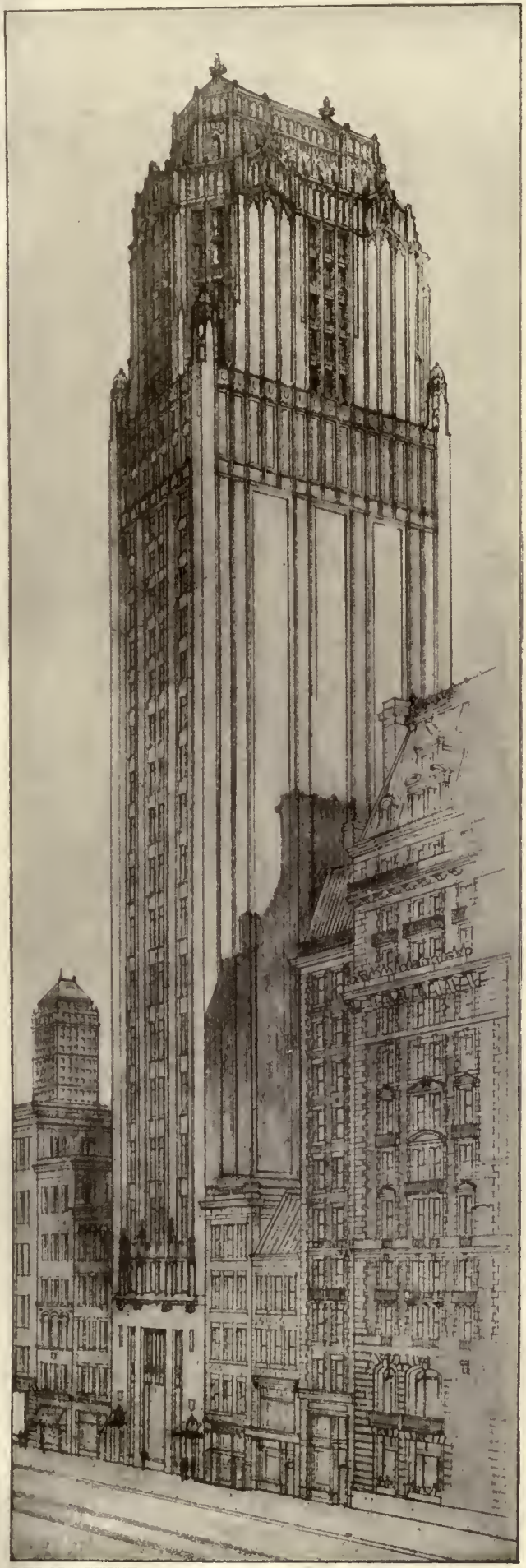
Helmle & Corbett, Architects.

INTERNATIONAL BUYERS' CLUB, SECOND FLOOR, BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK.

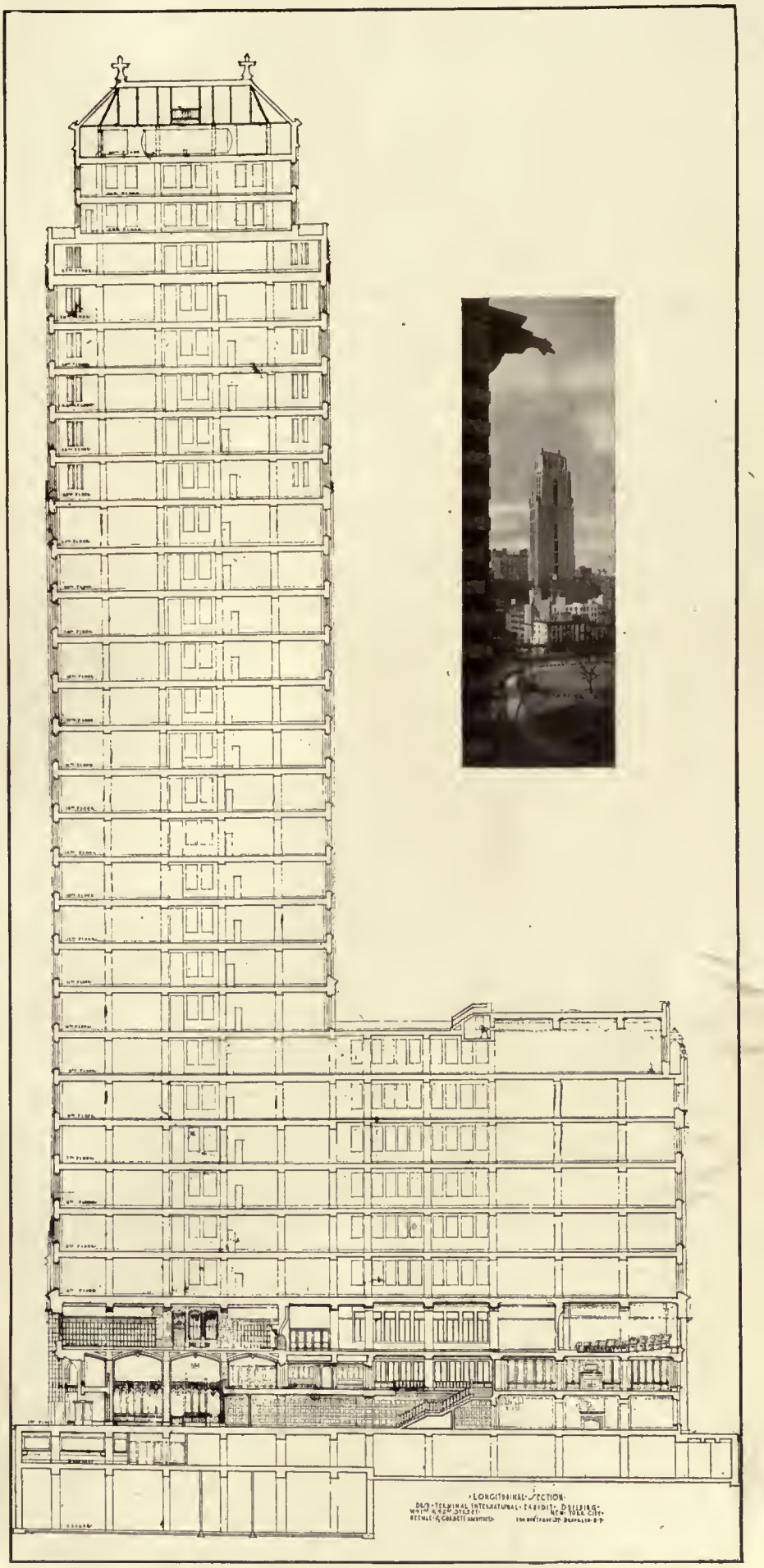
MERCHANTS' CLUB, BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK. Helmle & Corbett, Architects.

MERCHANTS' CLUB, BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK. Helmle & Corbett, Architects.

FIREPLACE, MERCHANTS' CLUB, BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK. Helmle & Corbett, Architects.



PERSPECTIVE.

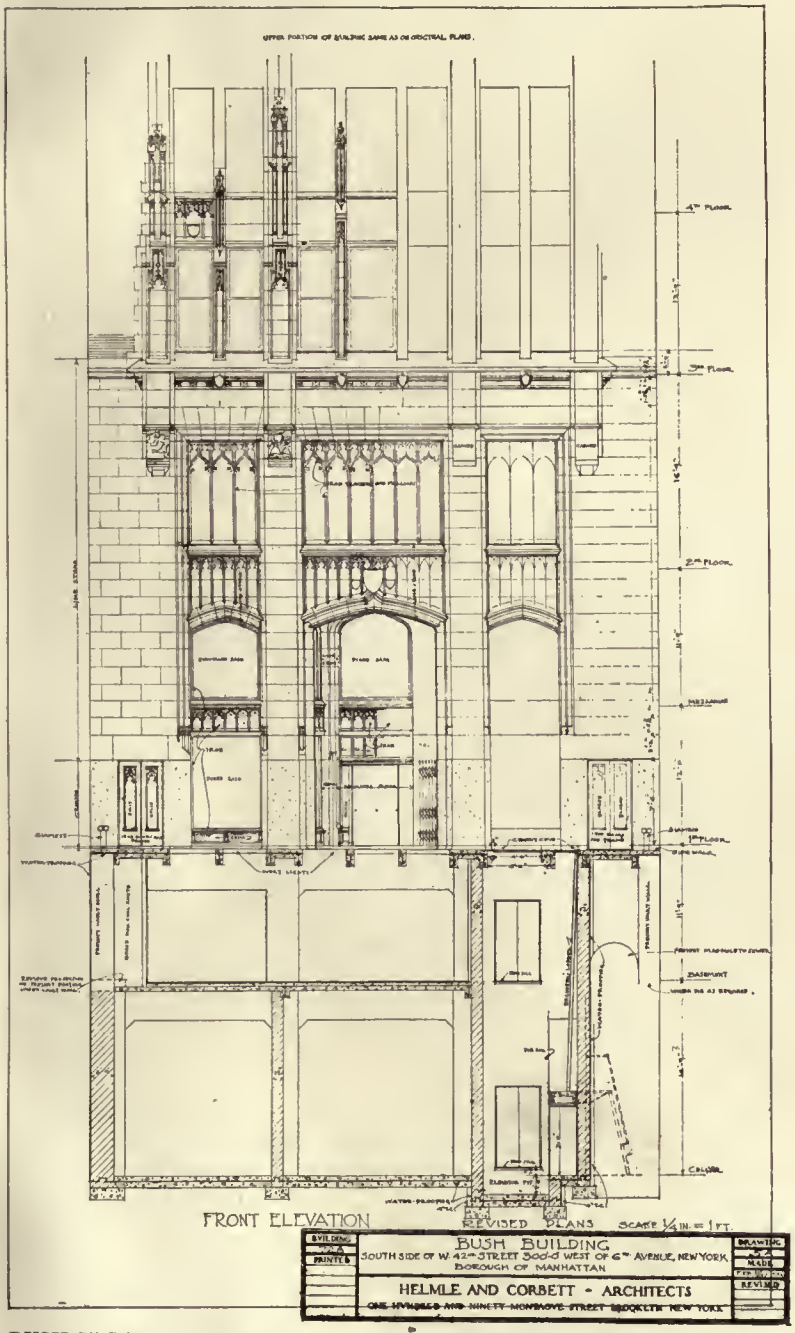


LONGITUDINAL SECTION.

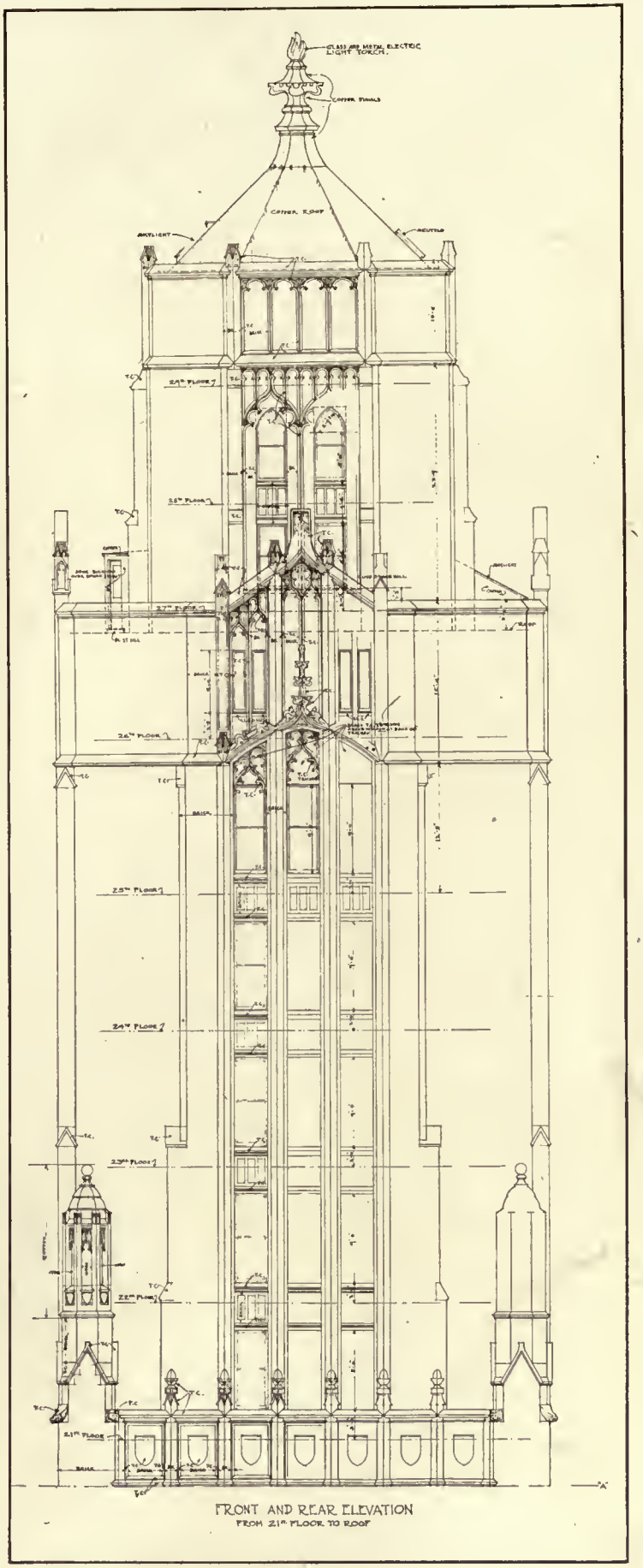
Helmle & Corbett, Architects.

BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK.

IN CONSTRUCTION.


FRONT ELEVATION
REVISED PLANS
SCALE 1/8 IN. = 1 FT.
BUSH BUILDING
SOUTH SIDE OF W. 42ND STREET 300-0 WEST OF 6TH AVENUE, NEW YORK
BOROUGH OF MANHATTAN
HELMLE AND CORBETT - ARCHITECTS

BUSH TERMINAL SALES BUILDING, WEST 42D ST., NEW YORK.



Helmle & Corbett, Architects.

ARCADE AROUND PLAZA.

INDIAN
TOWNSITE
MEXICAN
TOWNSITE
AMERICAN
TOWNSITE
PLANT OF THE—
NEW CORNELIA COPPER
COMPANY

RAILROAD DEPOT, TOWN SITE, NEW CORNELIA COPPER CO., AJO, ARIZONA. Wm. M. Kenyon, Maurice F. Maine, Architects.

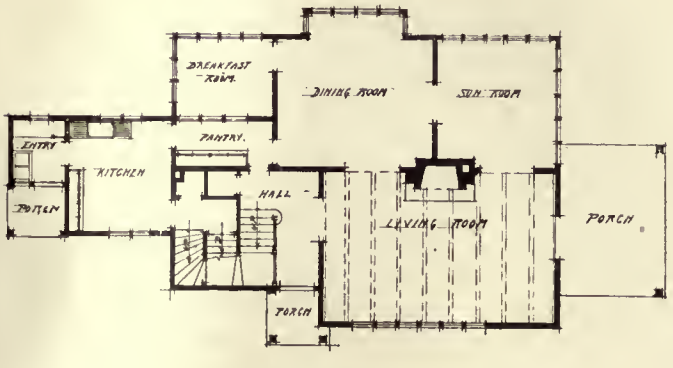
STORE BLOCK, TOWN SITE, NEW CORNELIA COPPER CO., AJO, ARIZONA. Wm. M. Kenyon, Maurice F. Maine, Architects.

HOSPITAL WITH HOUSES, TOWN SITE, NEW CORNELIA COPPER CO., AJO, ARIZONA.

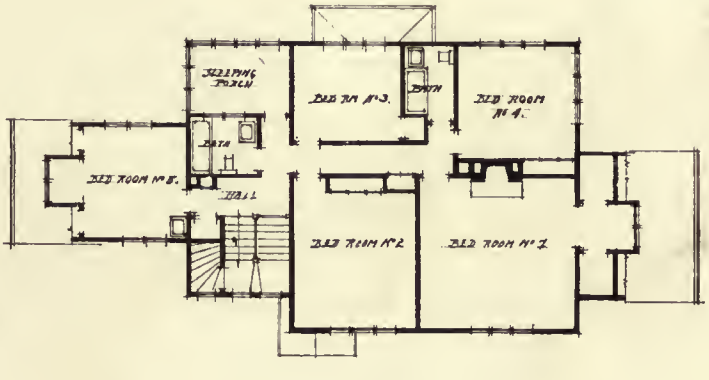
Wm. M. Kenyon, Maurice F. Maine, Architects.

GENERAL OFFICE BUILDING, TOWN SITE, NEW CORNELIA COPPER CO., AJO. ARIZONA.

Wm. M. Kenyon, Maurice F. Maine, Architects.



FIRST FLOOR PLAN.
HOUSE #7.



SECOND FLOOR PLAN.
HOUSE #7.

No. 7. OFFICER'S HOUSE AND PLANS, NATIONAL CASH REGISTER CO., DAYTON, OHIO. Louis Lott, Architect.

A Million Homes Needed by Our Allies

United States Will Supply the Necessary Building Materials

BELGIUM, England, and France are about to call upon the United States to supply building material and equipment for at least 1,000,000 houses, according to William C. Redfield, Secretary of the Department of Commerce. This fact, with disclosures concerning the domestic building situation made to recent trade conventions, has brought the American building investor face to face with a rather serious condition. The problem centres chiefly on the question of building material demand and the capacity of American manufacturers to meet an unprecedented domestic call for construction material, and at the same time take care of the imperative requirements of other parts of the world.

A computation of the probable amount of new construction is being made at present, and it is already evident, from figures at hand, that there is approximately twice as much building construction in project in this country to-day as in the best previous years ever recorded. No consideration is given to the building demands of South America and Canada, where American cement is already supplanting the German brands that formerly were almost exclusively used.

The building investor is face to face with an alternative of either taking what material he can get at existing prices or deferring his operation until prices come down. If he proceeds he will have to pay high prices, but also will have a demand for the finished building. If he waits he may find prices lower, but the demand will not be there. Foreign building material demand, as far as Europe is concerned, probably will be only of a year's duration, but that of South America will be of a permanent character. The demand for construction material in the United States cannot be met, even with present plans in project, short of two years, based solely upon normal demands. This demand now has expanded from domestic to world proportions. The estimate does not include speculative construction of any kind.

The price situation, as it pertains to domestic building materials, is developing without regard to organized control so far as can be discovered by a rigid investigation into the price markets. The mason material dealers are taking the almost unheard-of attitude of counselling against anything like arbitrary price advances. In fact, a Federal department is watching carefully for any evidence of price advances that have no foundation for the movement. For that reason, while no fixed Government quotation has been made in certain important basic building commodities, the Government is holding a potential control over any commodity that shows signs of stampeding. The Government looks to the building and allied industries to absorb much of the returning soldier and naval labor, and the intimation is plainly made in some channels that it intends to see that its plans are not upset by any price manipulation that will frighten off the prospective building investor.

Prospective builders will find it to their advantage to consider fundamentals in determining to defer construction. It took ten years for building material prices to find their normal level, with a few exceptions, following the Civil War. The construction programme of the country then was only sectional, whereas to-day it is world-wide and far beyond the capacity of present American building material manufacturers to supply it when it gets into full stride. Prices of practically every building commodity are remarkably steady.

From the "New York Sun."

Money and Building—Present Developments—Future Prospects

BEFORE building money will be freely had for projected construction the building material manufacturer and dealer, laborer, and equipment supply interests must show that prices of all commodities have been brought to a stage of stability.

In the absence of such assurance lenders are cautious, not because they fear their ability to compete with structures built before the war, but because they are wary of a condition where excessive demand for building materials to-day, when the quantity available is below normal, might result in such a stampede of prices, labor costs, etc., as to effectively prohibit construction.

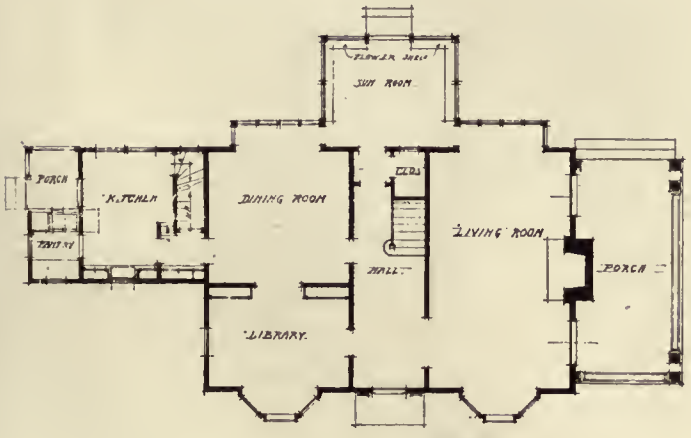
Walter Stabler, Comptroller of the Metropolitan Life Insurance Company, New York, probably the most dominant of institutions lending money on building construction throughout the country, analyzes the attitude of the average investor in respect to the current trend of building costs and the unquestioned demand for new buildings in this way:

"At no time has the present condition of the mortgage market been even approximated, nor have the present real-estate conditions ever before existed. The whole country reports rentals as higher in most cases than ever, and no vacancies of moment in either business or residence properties; and while expenses for taxes, coal, and labor are much higher than usual, the net returns are better and generally satisfactory. Places for residence are scarce, and in many cities great congestion has resulted. There is, therefore, a strong demand for new buildings of all kinds, particularly for residence purposes.

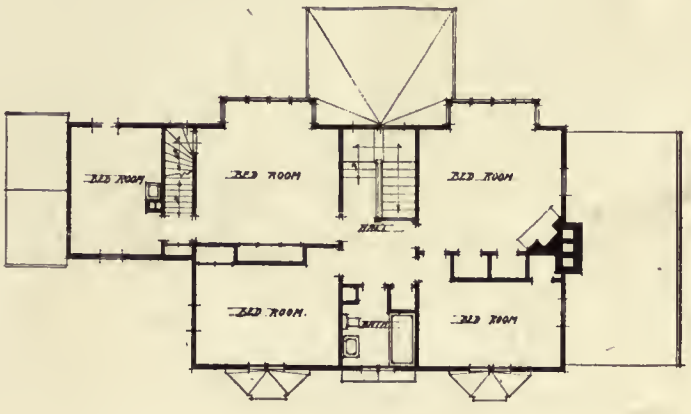
"The volume of construction now moving consists entirely of the most urgently needed commercial and industrial building work. One large concrete construction company, handling millions of dollars' worth of government work, recently made a survey of a New England town visited by a great fire, and developed only one insignificant contract, that one being for an industrial concern. Owners said they would not go ahead and rebuild until there was some sign of a general stabilizing of building prices. The owners' attitude is typical of all parts of the country, that, although there is a demand for more rentable space of a speculative nature, they would defer work until they had assurances from material, equipment, and labor interests that they had a stabilized market to deal with.

"In the interim there is about a 20 per cent of normal building market developing along the Atlantic seaboard

(*Continued on page* 16)



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

HOUSE AND PLANS, A. O. AULABAUGH, DAYTON, OHIO. Louis Lott, Architect.

from Baltimore to Boston. In the absence of, or the extreme high prices of, one material, architects are turning to another. The stone interests, hearing of the stiffening price of common brick, for instance, have been rushing great quantities of this material to large distributing centres like New York, Boston, and Philadelphia, and to-day there is immediately available 2,000,000 feet of Indiana limestone deliverable to job at prices barely above those ruling before the war, according to the Dow Service Daily Building Reports.

"Where there has been a tendency to boost yellow-pine prices enterprising Pacific Coast Douglas fir interests have brought 20,000,000 feet of this material to this market for immediate delivery at low levels. The glass manufacturers are about to grant a 25 to 30 per cent advance to workmen, but under this plan they will not employ more men than were employed last year, so that production in this department will be only 50 per cent of normal, but prices will be stabilized. To further help in stabilizing prices announcement will be made next week of the merger of two of the great crushed-stone interests of this district.

"Judged by the last two years of construction a very generous building market is developing among that type of construction that can be financed entirely by private funds. This includes business, commercial, and industrial work, and it will be sufficient to give every one a fair share of construction. The peak of the building movement cannot be expected until the summer of 1920, and under the present financial and construction controlling influences, it is entirely beyond the power of individual or corporate manipulation to advance it."

Announcements

Major Charles H. Higgins, Ordnance Department, U. S. Army, is honorably discharged from the service of the United States and has returned to the practice of his profession with his firm of Delano & Aldrich and Charles H. Higgins, architects and engineers.

William H. Gompert of 171 Madison Avenue, New York, wishes to announce that Mr. Lauritz Lauritzen has become associated with his office. Mr. Gompert is known as the architect of the Pullman Building on Madison Square, the Cuyler Building, and other important office buildings.

Dwight P. Robinson & Company, constructing and consulting engineers, announce that they think the cost plus fee basis is the most satisfactory one for architects. The new buildings of the Massachusetts Institute of Technology, of which Mr. William Wells Bosworth was the architect, were built on this basis.

The Portland Cement Association announces the appointment of Wm. M. Kinney as General Manager to succeed H. E. Hilts, resigned.

He is an associate member of the American Society of Civil Engineers and American Railway Engineering Association, a member of the American Society for Testing Materials, American Concrete Institute, Western Society of Engineers, Engineers' Club of New York, Engineers' Club of Philadelphia, and Chicago Engineers' Club. He has been particularly active in the work of the American Society for Testing Materials, being vice-chairman of Committee C–1 on Cement and a member of the Executive Committee. He is a member of the Executive Committee and Secretary of the Committee on Concrete Roads and Pavements of the American Concrete Institute.

Marshak & Hickey, architects, announce the opening of their offices, 310 Strand Building, Providence, R. I., to resume the practice of architecture, and would be pleased to offer their services in the designing, planning, and supervision of residences, office buildings, schools, churches, etc. Advice and consultation without charge.

B. H. & C. N. Whinston, architects, announce that they are now located in their new offices in the American Circle Building at 2 Columbus Circle, New York.

Blaney & Blaney, formerly at 6 Beacon Street, Boston, wish to announce that they have reopened their office for the practice of landscape architecture and town planning in the Brattle Building, Harvard Square, Cambridge, Massachusetts. Both members of the firm have been in the army.

I have transferred my drafting-room and library to the spacious Jackson Park Studio, at 1544 East 57th Street, Telephone Blackstone 5307, and retain my business conference office with an extensive exhibit of building and decorating materials at 175 West Jackson Boulevard, Telephone Wabash 2020, with personal hours from two to five P. M.

HENRY K. HOLSMAN, A. I. A., Architect, Chicago.

The Manufacture of Pressed Steel Parts

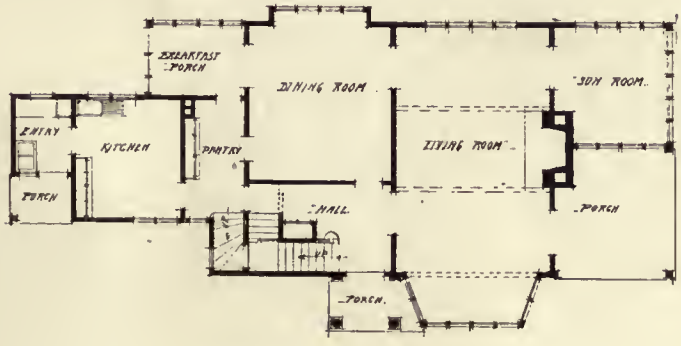
In recent years the manufacture of deep-drawn, heavy stamping and pressed steel parts has increased tremendously. Many articles previously made of cast or malleable iron are now successfully formed from steel, the result being a more satisfactory and durable part in most instances. Among the leading concerns in this business is the Truscon Steel Co., of Youngstown, Ohio. They have been manufacturing pressed steel parts for a number of years, the majority of such work being for use in their own products. Their products to-day practically cover the entire field of structural building materials.

Bank and Public Holidays Throughout the World

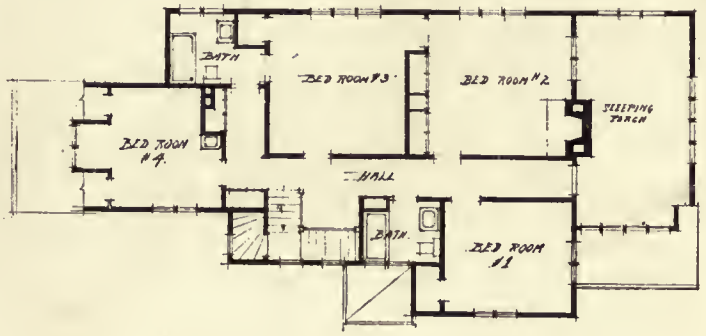
The Guaranty Trust Company of New York has prepared for the year 1919 a new and enlarged edition of the book issued a year ago on "Bank and Public Holidays Throughout the World." That book embodied what is believed to have been the first attempt to compile a complete list of the holidays of all nations, and was prepared especially for bankers, merchants, and manufacturers engaged in international trade. It is now in use everywhere by those whose business involves the making of payments and collections in other countries, and has come to be recognized as an authority.

This book is not for sale, but is printed as part of the service which the Guaranty Trust Company of New York provides for its customers and others.

OFFICER'S RESIDENCE.



FIRST FLOOR PLAN
HOUSE Nº 6



SECOND FLOOR PLAN
HOUSE Nº 6

No. 6. OFFICER'S HOUSE AND PLANS, NATIONAL CASH REGISTER CO., DAYTON, OHIO. Louis Lott, Architect.

Why Not a Ministry of Fine Arts for the United States?

NOT long before the war began we seconded a movement—which we had often suggested before—for the establishment of a Ministry of Fine Arts. It was supported at the time by many artists of all grades and aptitudes. It was urged in these columns, and elsewhere, that our past efforts to make Art a real national asset had, to put it mildly, not been very successful—at any rate, as far as Government initiative had been vouchsafed. It was shown that the Department to which the organization of such aid as had been conceded had been intrusted, had for the most part quite mistaken its mission; and that the result so far had, perhaps not unnaturally, aroused a distrust in Parliament, and probably outside of it, of any further additions to the long list of well-housed, well-paid officials, whose zeal, when manifested, had been kindled by no special knowledge of or enthusiasm for the cause of which they had been created the administrators, and whose exertions were apparently paralyzed by the old taint of circumlocution.

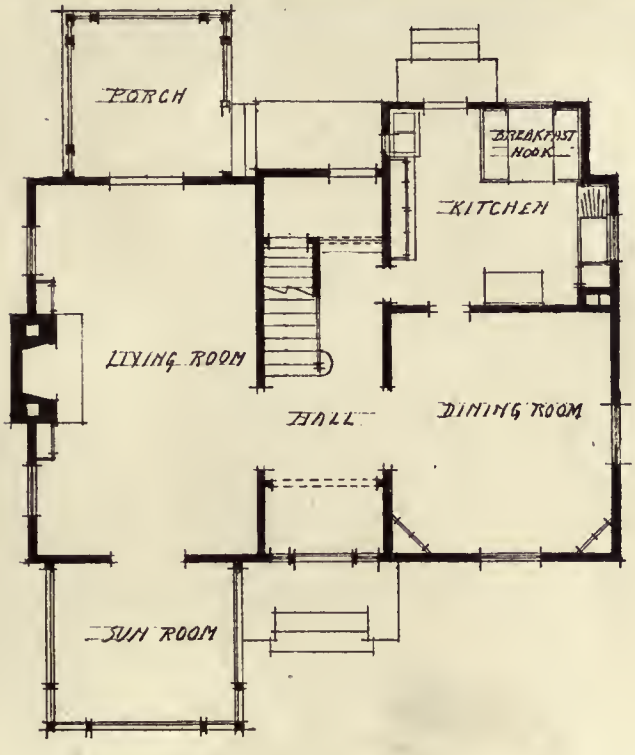
As the war drifted along, and Lord Kitchener's death deprived us of his priceless capacity for organization, and Mr. Asquith's resignation was followed by Mr. Lloyd George's accession to the Premiership, it became evident that, for good or evil, the old principle of Ministerial responsibility to Parliament had gone by the board, and that henceforth we were to be governed by "Ministers" chosen by nobody knows who, unrecognized as heretofore by election to the House of Commons by the vote of the people, and, apparently, answerable to nobody for failure and, as events proved in most cases, of little use. The one "Ministry" that has yet to justify its existence or follow most of the others into the limbo of lost activities is that of Reconstruction. That, so some say, is to reorganize everything, and inaugurate the great new era of prosperity which is to purify and elevate industry. As yet, it is discouraging to note that there is not the slightest sign of recognition that no scheme of reconstruction can possibly be worth twopence to the nation which leaves Art out of its purview, and denies to artists any voice in its inception or operation. Nor is there any general conviction that it may do more harm than the calamities war has inflicted on us. Few seem aware that every industry, from agriculture down to the least useful calling, must be either an organized art or a demoralizing fraud. Fewer still are alive to the fact that in the economic struggle which will follow peace Art must lead, representing as she does the most solid and enduring capital which can be utilized for really national service.

As usual, our French Allies, who knew this long ago, and have profited by the knowledge, are already far in front of us in the work already set going for the broadening of the facilities they already possess, thanks to the numerous societies founded since 1851, when, as one result of the Great Exhibition here, the Union Centrale des Beaux-Arts Appliqués à l'Industrie was founded. In 1874 this society amalgamated with a new body for the creation of a museum of decorative art, and the two became the Union Centrale des Arts Décoratifs, whose work has been the organization of the Museum of Decorative Art in the Pavillon de Marsau. In 1889, the year after the foundation of our own Arts and Crafts Society, arose the Société d'Encouragement à l'Art et l'Industrie. This body was instrumental in securing the recognition of the claims of decorative art in exhibitions at home and abroad, it organized ambulatory exhibitions, established scholarships for apprentices, arranged competitions for the students of the various schools of decorative art, and did much to induce manufacturers to invite the cooperation of students and professional artists in their productions. Later on, in 1904, another society, called the Société des Artistes Décorateurs, was founded, whose aim was the organization of exhibitions of schemes and projects of interior decoration and furnishing. Then came the Union Provinciale des Arts Décoratifs, founded for the purpose of reviving regional arts and industries throughout the country.

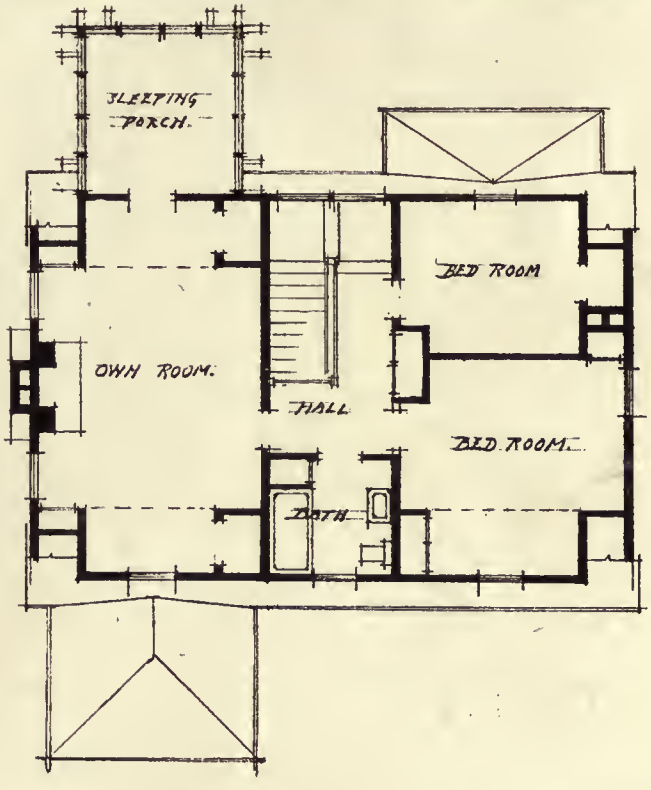
The French Ministry of Fine Arts promptly recognized the value of these organizations, and others—such as the Comité Central des Arts Appliqués and the Comités Régionaux d'Art Appliqué. At the inaugural meetings of the two last mentioned in July last year M. Dalimier expressly indicated that the new Regional Committees are to study all questions relating to the preparation of artistic craftsmen for their tasks, to suggest necessary reforms in artistic and general education, to interest themselves in the work and progress of students and apprentices in the district with which each committee is concerned, to give continual support and encouragement to the principals and teachers of schools in their experiments and researches, and generally to keep the Ministry of Fine Arts constantly informed as to the needs of the district and to report progress. The Central Committee, it should be added, comprises two members of the Senate, two members of the Chamber of Deputies, a delegate from the Paris Chamber of Commerce, representatives of the three great *salons*, delegates from the four great art and craft societies, twelve representatives of the chief artistic industries and of the great trade houses in Paris.

As regards ourselves, it will be at once admitted that we have no present institution of the kind to which, as they exist, any Minister is likely to intrust such preponderating influence as Art must have in any real scheme of reconstruction. Some good work has been done by the Art Workers Guild and the Arts and Crafts Society, but it is not comparable for a moment with that which has been done in France, nor is that which made the Arts and Crafts Exhibition at the Royal Academy last spring such a failure. But there is no lack of individual ability. It is true the movement inspired by men like Ruskin, Morris, and Crane has for the time languished, but there are others still with us who know at any rate what we lack, and that till we find it our industries will degenerate if anything they produce is conceived or produced without the help of Art. The first step any real Minister of the Fine Arts would take would be to follow M. Dalimier, who instituted a number of committees of inquiry throughout the Departments appointed to inquire into the causes of the failure or decadence of certain industries. These committees were unanimous in declaring, first, that the artistic education of the French workman is inadequate, and, second, that the need for the re-establishment of the apprenticeship system was universally recognized. They recommend that it shall be made obligatory on the master to send his apprentices in his own time to study at the appropriate trade or craft school, and that it shall be equally obligatory on the apprentices to attend. These recommendations have had one immediate practical result. The Senate has already made these two obligations, in the case of trades and trade

(*Continued on page 20*)



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

HOUSE AND PLANS, P. BARTON MYERS, DAYTON, OHIO.

Louis Lott, Architect.

schools, the subject of a decree. The same procedure is about to be followed, according to M. Dalimier, in the case of the crafts and artistic industries, and will apply to all craft schools and schools of decorative art.

The next indispensable act of any such Minister should be to take order that our workshops should be better planned, and made healthier and workable in, without injury to the *moral* of the workers. Concurrently should follow every encouragement of a great increase of small workshops, and the formation of craft and industrial villages. From the one-man workshop, working on right lines, and amid favorable associations, as from the small inventor, come the ideas and impulses on which the large establishments depend. Some of the small men will still flock to the factory. More, we trust, will cling to the freedom and independence which are the life-springs of Art. In such small undertakings many of our returned soldiers and sailors will find congenial means of securing a livelihood, instead of ornamenting the doors of shops and kindred buildings as porters.

As yet there is no sign that the Minister of Reconstruction perceives any such necessities as we have briefly indicated. If he had, he would ere now have taken counsel with the English artists and craftsmen, as M. Dalimier did with those of France, and enabled them, at the head of such an organization, to attempt what is being done there to head the task of national regeneration. If he is content to rely on the "Captains of Industry," who have piled up fortunes at the cost of the workers, or the Factory lords who have transformed the towns and country-side into labyrinths of standardized hovels, who have defaced and dishonored beauty, and given us ugliness and deformity in its stead, or on the still more fevered race for new markets for rubbish that no foreigner will buy, which is the primal cause of war, and all of which together are sapping the moral and physical health of the people, the prospect is indeed a hopeless one.

From "Building News," London.

We Are Going to Build and Build and Build, Says Willis Polk

NOW that the frosts of war that drove the building industries into hibernation have been dispelled by the grateful warmth of the armistice, the dormant Bear of investment finance stirs in its slumbers, rubs its eyes, and prepares to seek whom it may devour! But dazed from its long inactivity, emaciated from its enforced fast, it is cautious. It is like the architects, and the architects are like the twenty cats camped around one tiny knot-hole from which one timid little mouse exposes one bristly little whisker. So queries Mr. Investment Finance: Can we build now? What about capital issues? What about priorities? What about the next Liberty Loan? What about the high cost of labor? What about the high price of material? Still the spring thaw that releases the stored-up snows of winter, with its resultant freshets, will wash away all obstacles to progress.

Shall we wisely impound and direct this flood, or shall we permit its uncontrolled flow to wreak destruction equal to or greater than the devastation of war? Therefore, Mr. Capital Investment, Mr. Labor, and Mr. Materialman, harken unto my voice! Sit thou at my feet and learn wisdom! Labor will never be cheaper. My father, after the Civil War, was glad to cut, haul, and pile good oak cord-wood for one dollar a cord. I guess we are glad to pay twenty dollars to-day.

Still we can buy a better elevator for less money to-day than we could ten years ago. We can buy a better automobile for less money to-day than we could five years ago.

We can build a better building for less money to-day than we could twenty years ago.

Twenty years ago more steel was put into the foundation of the Claus Spreckels Building in the form of grillage than was recently put into the entire Hobart Building from base to roof. We didn't know better then; we know better now. We can do better things now for less money than we could then. James Phelan, it is said, traded a band of mules for the lot upon which the Phelan Building stands to-day. What are we going to trade for the opportunities of this moment?

We are going to build and build and build, wages and prices to the contrary notwithstanding. The sleeping giant stirs; the sleeping giant wakens. Look out when he sheds the superfluous hair from his shaggy fur! Stand aside, oh, timid ones, lest thou be devoured.

The late D. H. Burnham used quizzically to relate that H. H. Richardson held that an architect's first duty was to get a job. Then he would solemnly observe: "But Henry was wrong. An architect's first duty," he maintained, "was to *do* the job."

"But do it well," he would always add.

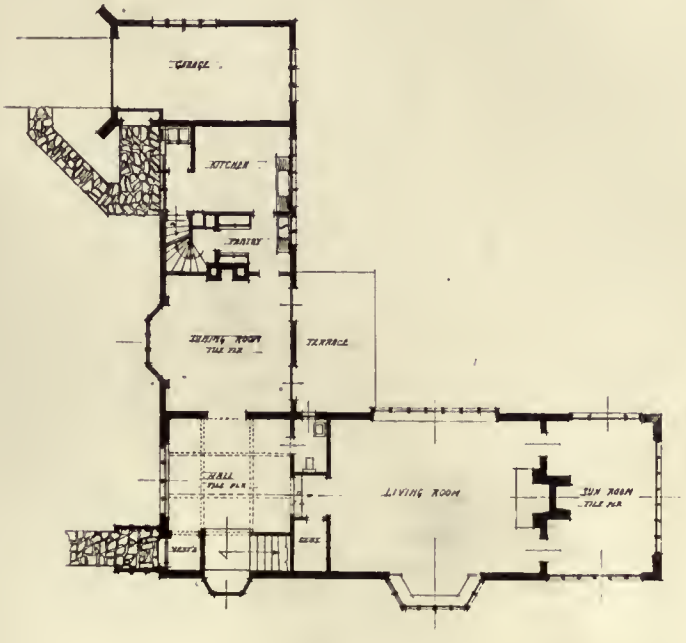
Why Not Put Theory into Practice in Our Architectural Schools?

NOW as to the course of training architects. Almost every college or university is continually planning some improvement on the campus or in planning new buildings. Why cannot all this work be performed by the junior and senior students in the architectural and engineering colleges under the direction of their professors? This is not only possible but absolutely feasible!

We have positive demonstration of this at the Tuskegee Institute for colored students now in Alabama! This, in my opinion, is the most practical school of architecture in the United States, and possibly in the world. It was left to Booker T. Washington to show us how! Here the student not only prepares the drawings but he actually lays the brick, pours the concrete, does carpenter work, plumbing, painting, plastering—in short, everything that enters into the building to make it complete. There are now in the neighborhood of some sixty buildings on the campus, and these buildings as a whole will compare very favorably in architecture and workmanship with most of our State university buildings. It follows that graduates of such schools are not only competent to intelligently design a building, but they are supplied with the necessary business knowledge which most of our graduates absolutely lack. Had such methods been in vogue in our universities we would have now more intelligent contractors and possibly less mediocre architects, who not only are a hindrance to themselves but to the whole profession at large.

Will our university directors consider this necessary change in their school curriculum?

James B. Dibelka, in the Bulletin of the Illinois Society of Architects.



FIRST FLOOR PLAN

SECOND FLOOR PLAN

HOUSE AND PLANS, C. C. BLACKMORE, DAYTON, OHIO. Louis Lott, Architect.

War Memorials

Suggestions for Their Treatment from The American Federation of Arts

IN response to requests for advice from different quarters, the following suggestions are offered to those who are considering the erection of war memorials:

(1) Consider the amount of money probably available. Conclusion on this point must necessarily precede any determination as to the form of memorial, and is equally important whether that form be some structure, architectural or sculptural, painting, or work of landscape art.

(2) Consider tentatively the form which the memorial should preferably take, whether architectural or sculptural, a painting, or some kind of landscape art.

(3) Also the question of site. This question is of vital importance. In large towns the memorial, if monumental, should not be so placed as to obstruct traffic and at the same time should be in a position sufficiently conspicuous to be worthy of its object. Existent buildings and other surroundings should be considered in deciding location. So should also the permanence of such buildings and surroundings. This is quite as important in the case of a small village as in a large town or city.

(4) Likewise in connection with any structure the question of material, whether stone, marble, or bronze. Local stone has advantages, both economically and sentimentally.

(5) The approaches to any memorial and the points of view from which it is seen are quite as important as its immediate surroundings.

(6) The cost of laying out the site, when necessary, should be included in the scheme. The effect of a memorial is often entirely lost by want of a careful laying out of the site.

(7) Where memorials are proposed for the interior of buildings, whether in sculpture, architecture, stained glass, mural paintings, or wall tablets, careful regard should be paid to the scale and character of the architecture of the building and to any adjacent monuments.

(8) The lettering of all inscriptions should be carefully studied and should be legible. A bold Roman type, or the Italian lettering of the sixteenth century based on it, is the type most suitable.

(9) In all memorials simplicity, scale, and proportion should be aimed at rather than profusion of detail or excessive costliness of material. It is the artistic, imaginative, and intellectual quality of the work that gives it its final value.

(10) Before the adoption of tentative plans, and preferably before any plans are made, secure expert advice. This can usually be best obtained by calling in a competent artist, be he an architect, a sculptor, a painter, or a landscape architect. If there is to be a competition, careful specifications setting forth the terms of the competition should precede it. It should be remembered that the ablest artists are not usually willing to enter competitions except for structures of the most important kind.

BOARD OF DIRECTORS

Herbert Adams.
Mrs. John W. Alexander.
Charles W. Ames.
Cecilia Beaux.
George G. Booth.
Andrew Wright Crawford.
Robert W. de Forest.
Cass Gilbert.
Arthur A. Hamerschlag.
Charles L. Hutchinson.
Francis C. Jones.
Otto H. Kahn.
H. W. Kent.
Florence N. Levy.
Charles Moore.
Charles Allen Munn.
Duncan Phillips.
Mrs. Gustav Radeke.
Elihu Root.
G. D. Seymour.
Joseph E. Widener.

ROBERT W. DE FOREST, *President.*
CHARLES L. HUTCHINSON, *First Vice-President.*
CASS GILBERT.
FRANCIS C. JONES.
CHARLES ALLEN MUNN.
MRS. JOHN W. ALEXANDER.
ANDREW WRIGHT CRAWFORD.
Executive Committee.

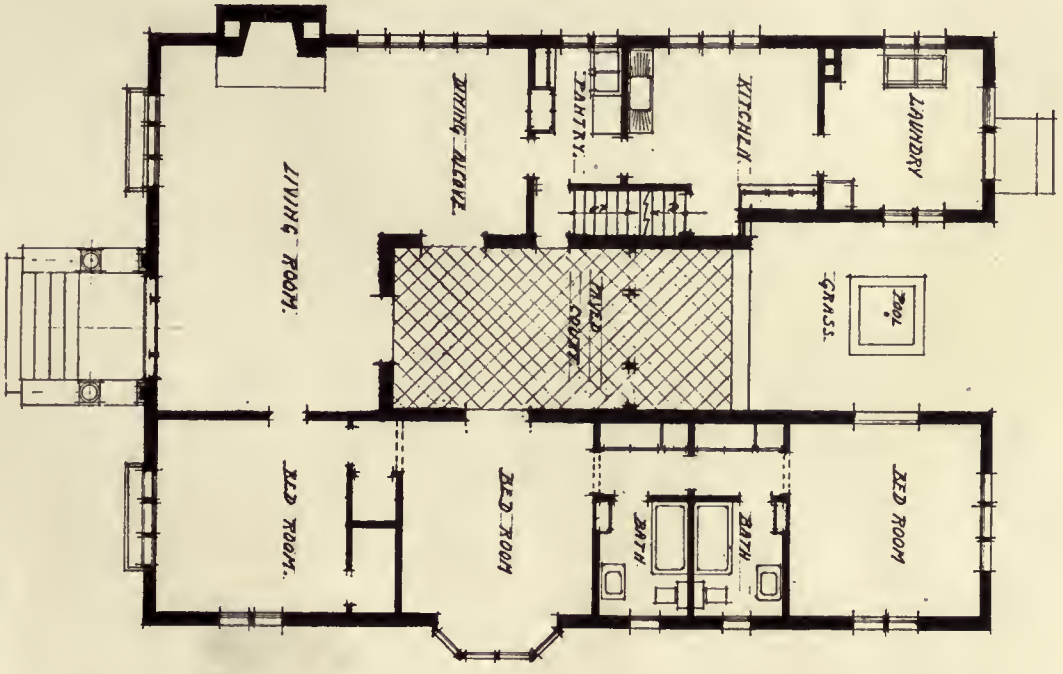
Japanese Architects Our Guests

DURING the past month New York has been honored by the presence of three distinguished Japanese architects: Uheiji Nagano, Yutaka Heidaka, and Seichiro Chujo. The first named is the president of the governing body of Japanese architects similar to the American Institute of Architects.

In the early part of their visit a dinner was given at the Nippon Club, to which a number of prominent New York architects were invited.

The New York Chapter A. I. A. gave a dinner on January 7 at which the visitors were the guests of honor.

They have now departed for the West.



HOUSE AND PLANS, W. B. PATTERSON, DAYTON, OHIO. Louis Lott, Architect.

Legal Decisions of Interest to the Architect

These decisions are edited by Mr. John Simpson

Liquidated Damages for Delay in Completion

A contract to wreck a building provided that the architect was empowered to certify an extension of time for completion if the contractor was delayed in starting the work. The owner did delay the beginning of the work. The contractor did not thereupon apply to the architect for an extension of time, and there was no waiver of the requirement. The New York Appellate Division holds that the owner's act in delaying the beginning of the work did not destroy the provision for liquidated damages for delay.—Trants Realty Corp'n *v.* Casualty Co., 166 N. Y. Supp. 807.

Enforcement of Building Restrictions

The courts are slow to declare building restrictions burdens upon real property unless it clearly appears from the deeds of conveyance, not only that a general scheme of improvement is contemplated, but also, if a grantee of the original covenantee seeks to enforce the restriction, that it is not a mere personal covenant but passes with the land. The rule is that where the fee is passed to the covenantor, and no reversion is left in the covenantee, there is no privity of estate or tenure between the parties, and the burden of the covenant, though imposed upon the land conveyed, is solely for the personal benefit of the covenantee, not passing with the realty to his grantee.—Breese *vs.* Dunn (Cal.), 172 Pac. 387.

Owner's Right to Counterclaim for Defective Work

The Rhode Island Supreme Court holds that where a building contractor sued for the price of extras, including in the declaration all sums due him "under said contract," the defendant owner could recoup her damages for defective work, although the plaintiff sought to prove that the amounts sued for became due under such an alteration of the original contract as to constitute a new one. The court said that even if by a very strict and narrow construction it was held that the damages claimed by the defendant in recoupment grew out of the original contract, and that the plaintiff's claim for extras was a separate and additional contract, nevertheless it was obvious that both claims grew out of one and the same transaction, to wit, the building of the house. There was evidence that the owner paid the contractor the full contract price, believing that the contract was properly performed, but discovered later that there had been a breach. It is held that a charge to the jury that if she paid him the contract price under a "misapprehension" of fact she could recover her damages was not open to the objection that there was no evidence to support the use of the word "misapprehension," since there was testimony that after payment of the price the owner discovered that white lead and linseed oil were not used in the outside painting.—Mr. Phillips *vs.* Durkin (R. I.), 103 Atl. 929.

Extra Work

The Washington Supreme Court holds that, under a contract providing that the plaintiff would do the plumbing work for a specified sum, and would furnish a list of materials required for "roughing in," this including all materials necessary to do the plumbing in accordance with the plans and specifications, the contractor could not recover for extra work and materials required between "roughing in" and the setting of fixtures. The owner, it was held, would not be bound by a custom among plumbers to call extra work "roughing in" unless it clearly appeared that he contracted with reference to it.—Donaldson *vs.* Brewster (Wash.), 173 Pac. 1018.

Liability of Charitable Institution for Improvements

In an action to foreclose a mechanic's lien for materials furnished for improvements on a building belonging to a charitable institution it appeared that at a former hearing of the case (95 Neb. 491, 145 U. W. 1023) it was held that the institution did not and could not, under its charter, enter into a valid contract for the payment of the claims of materialmen, the material having been furnished for the purpose of constructing a hospital. It was held that this previous holding constituted the law of the case to be adhered to, the evidence adduced remaining substantially the same. It was also held that, the institution having, because of the substantial benefit which it had received from the improvements, made provision for the raising of a fund for the payment of the value to it of such benefits received, the court would order the application of any such fund so raised to the payment of the cost of any benefits so received. —Horton *vs.* Tabitha Home (Neb.), 165 N. W. 2.

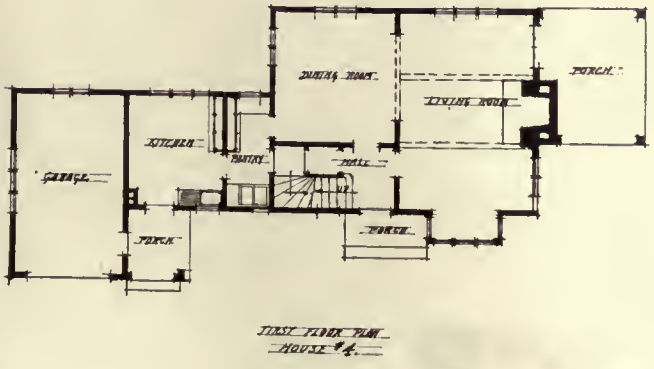
Penalty for Delay—"Working-Days"

In an action upon a building contract where the defense was that the building was not completed within the time specified it appeared that the contractor had agreed to complete the work within 55 days from the date of the contract. It was held that the term "working-days" excluded not only Sundays and holidays but also days on which no work could be done because of weather conditions, but included Saturday as one working-day, although the labor rules required suspension of work on Saturday afternoon. The contract provided for liquidated damages of $100 per day for delay in completion. The value of the building was only $60,000 to $65,000, and the rental value $6,500 per year. It was held that as the sum stipulated was disproportionate to actual damages, it was merely a penalty.—Christopher *vs.* Simpson, Architectural Iron, etc., Co. *vs.* Steiningh Const. Co. (Mo.), 205 S. W. 278.

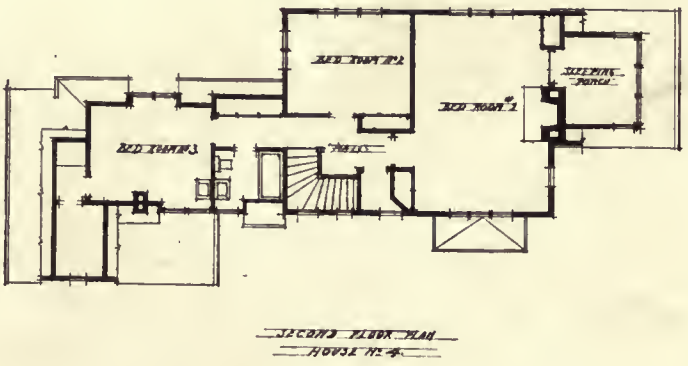
Measure of Damages in Quantum Meruit Actions

In a contractor's action in quantum meruit in the Missouri courts to recover an unpaid balance for the construction of a building the defendant urged that the plaintiff procured the material and labor at a less price than the proof showed the reasonable value to be, and therefore should not be entitled to more than he paid out, in this action. To illustrate: R. contracted the excavation work at $2,600, and then did $100 of extra work. He was paid $2,700. He testified that the work he did was reasonably worth $3,275, and that he lost $500 to $600 on the job. Other testimony was to like effect. This brought up the question what is the measure of recovery in cases of this kind. In Missouri there are two classes of cases in quantum meruit growing out of

Continued on page 26



FIRST FLOOR PLAN
HOUSE #4.



SECOND FLOOR PLAN
HOUSE #4.

No. 4. OFFICER'S HOUSE AND PLANS, NATIONAL CASH REGISTER CO., DAYTON, OHIO. Louis Lott, Architect.

violated building contracts: (1) Cases where the contractor has breached the contract, and the owner has taken over and used the material and labor furnished by the contractor; and (2) where the owner has breached the contract, and the plaintiff has elected to sue in quantum meruit rather than on the contract.

The Missouri Supreme Court said: "There has been some loose writing in the Missouri cases as to the measure of recovery in these two classes of cases, but in Division I I have set out what I now assert to be the true rule in a case where the owner has breached the contract. . . . With a preciseness characteristic of the man, Rombauer, P. J., in Kelly *vs.* Rowane, 33 Mo. App., loc. cit., 443, thus summarizes the law: 'The law governing the rights of parties to building contracts in this State, although peculiar, is well settled. If a contractor is prevented by the unauthorized act of the owner from completing a building contract, he may recover in an action the reasonable value of his work and labor, regardless of the contract price, and is not restricted to a pro-rata share of the contract price. On the other hand, if he voluntarily abandons the contract, he may recover the actual value of the work and materials, not exceeding the contract price, less such damages as have resulted to the other contracting party from the breach of the contract.' That we have cases which say that the plaintiff (contractor), who has not breached his contract, suing in quantum meruit an owner who has breached his contract, cannot recover in excess of the contract rate, there is no doubt; but to my mind these cases overlook the real distinction. Where the contractor breached the contract, and then sues for material and labor in quantum meruit, it is proper to limit his recovery so as to keep the finished structure within the contract price. This because his breach of the contract does not destroy the owner's rights under the contract. By breaching the contract he cannot take from the owner the rights reserved in the contract, but the owner in the quantum meruit action can at least assert the contract to the extent of fixing values and damages. . . . But in a case where the owner violates or breaches the contract, we universally say the plaintiff can elect to sue in quantum meruit rather than for damages on the contract. If he does so sue, the special contract performs no function in that suit. The defendant cannot undertake to limit the recovery by the terms of the contract, because he has breached the contract. To permit him to use his breached contract to limit a recovery against him would be to pay to him a premium for his own wrong. The law does not contemplate such. The apparent conflict in our cases grows out of an oversight in considering this vital difference between the two classes of quantum-meruit actions growing out of breached builders' contracts. To my mind it is not consistent with good reason to hold that an owner who has breached his contract can yet use that contract to limit the amount of recovery in a quantum-meruit action for labor and material which he appropriated at the time he breached the contract."

Violation of Building Restrictions

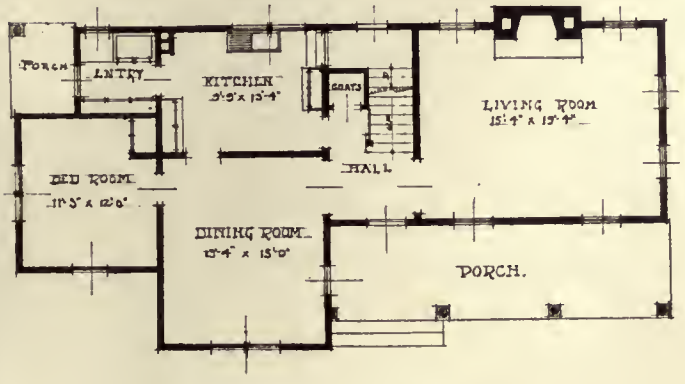
Building restrictions on 28 lots, comprising part of a general improvement scheme, were violated by the owners of 7 of the lots. In a suit against another owner for alleged violation of the restrictions the infraction complained of was merely the erection of a house with one side and a projecting chimney too close to the side line, and did not diminish the value of the other properties. The enforcement of the restriction would not tend materially to restore to the district the character impressed upon it by the general scheme. The California Supreme Court held that the restriction would not be enforced by injunction.—Bryant *vs.* Whitney, 174 Pac. 32.

Completion of Work by Owner—Notice to Contractor

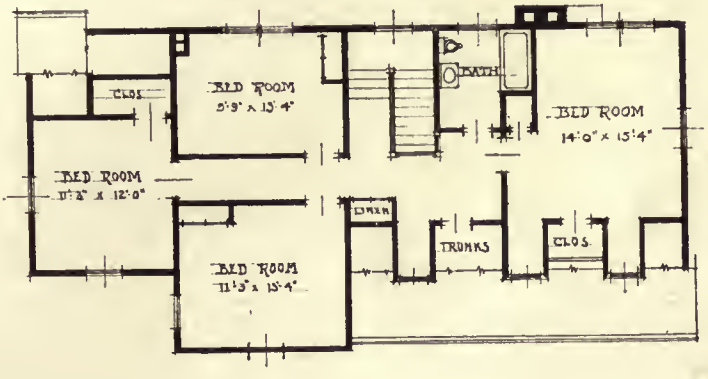
A building contract contained a provision that, should the contractor refuse or neglect to supply a sufficiency of materials or workmen, the owner should have the power to provide these, after three days' notice in writing, to finish the work, and the reasonable expense thereof should be deducted from the contract price. The contractor abandoned the work, which was completed by the owner. In an action by the latter on the contractor's bond, there was testimony that the architects, at the time of abandonment, served upon the contractor a written notice, notifying him to finish the building, in the form of a stipulation between the architects and the contractor, setting forth certain items of work which must be done before the architects would accept the building. The stipulation then stated: "If the hereinbefore mentioned items are not finished within three days, then the said architects shall have the privilege of completing the same, paying the necessary expenses thereof." A copy of this, signed by the contractor, was retained by the architects and produced in evidence. The copy retained by the contractor was not signed. It was held that although the latter copy was not signed by the owner, it was given by his authority and was accepted by the contractor as the equivalent of a signed notice, and as being in fact a notice in writing. The sureties were therefore not released by the owner's taking possession and finishing the work.—Cohn *vs.* Smith (Cal.), 174 Pac. 682.

Restrictive Covenants—"Front Foundation Wall"

The New Jersey Court of Chancery holds that, while a restrictive covenant against building on a lot unless the "front foundation wall" be at least 75 feet from the street was not violated by a porch within the 75-foot distance, it was violated by the alteration of the porch to erect a second story thereon, forming substantially an addition to the main building, although piers supporting the double-decked structure were not technically a foundation wall. The term "front foundation wall" does not necessarily imply a solid wall, but includes anything which serves the purpose of a foundation wall. The court said that the clear purpose of such a restrictive covenant is to prevent the erection of something which can be sensed by one of the senses. When the grantor used the language "foundation wall," he had primarily in mind, not the masonry forming the foundation, but the structure superimposed, or a structure ordinarily superimposed upon a foundation wall which would appeal to the sense of sight of a neighbor. To hold that a person under the terms of such a covenant may erect a main structure, which would ordinarily rest upon a foundation wall, and be within the terms of the covenant, without a foundation wall technically speaking, and be within the terms of the covenant, would render the language of the restrictive covenant meaningless.—Marsh *vs.* Marsh (N. J.), 104 Atl. 373.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

TENANT'S HOUSE AND PLANS FOR JOHN H. PATTERSON, DAYTON, OHIO. Louis Lott, Architect.

The Present Cost of Building

"Forward, March!" Says Willis Polk

THE immutable God-made laws of competition always control the economic world, and no end of man-made laws ever results in more than a temporary ripple on the placid surface of things as they are. For example: Is the present cost of building prohibitive? Would it be wise upon the part of investors to defer improvement at this time with any certainty that they will, during the ensuing conditions, profit rather than lose by such deferment? A safe estimate of future conditions may always be wisely prognosticated by a careful analysis of the past. For example, vain hopes often encourage the anticipation of things unattainable, as the farmer's son said to the butcher: "Pop told me to ask forty dollars for this here heifer, but if I couldn't get forty to take thirty." Now, shall we encourage ourselves in a penny-wise, pound-foolish policy of waiting, or shall we be bold and courageous, improve our properties, post up our net income upon capital investment at 6 per cent net on the money, or shall we let the property remain idle at minus zero? Personally, I do not feel either qualified or competent to set myself up as a prophet in this very serious question. I can do nothing more than to express my personal opinions and beliefs. I remember the day when Thanksgiving turkeys sold at seven and one-half and eight cents per pound; only recently I cheerfully paid my local retailer thirty-eight cents per pound for a turkey. I remember the day when the honest laborer, worthy of his hire, contentedly worked and slaved industriously ten, eleven, and twelve hours a day for a dollar and a quarter. I remember when, in 1891, the Mills Building in San Francisco, celebrated as one of the pioneer modern office-buildings of the world, and to-day still one of the best, cost at that time, when labor for ten hours received the average wage of a dollar and a quarter and mechanics for nine hours received the average wage of three dollars, cost forty cents per cubic foot. In the reconstruction of and addition to this same building, following the earthquake and fire which destroyed our beautiful city, and during a period of apparently excessive costs and high wages, with labor working eight hours per day at an average wage of two dollars and a half and mechanics working eight hours a day at an average wage of six dollars, the cost with improved methods was but thirty-three cents per cubic foot. Of course there are always fluctuations in local values, but I seriously believe that the big man can exact compensation from the morrow for his losses of to-day. It is only the small man, in the hope that he can make some gain by delay, who permits valuable property to remain idle one moment. There are many notable instances within the confines of our fair city illustrating the point in question, to wit: many of our vacant lots. Of course these casual observations of mine should be taken with a grain of salt. I am in the building business. It is to my interest to encourage building.

But in any event, as a last resource, doubting Thomases who desire to ignore the adage that "He who hesitates is lost" might find consolation in this note on preparedness: Would it not now be advisable for such persons to proceed with the development of any plans that might be required for prospective improvements, and by this method be prepared at a moment's notice to take advantage of any favorable market conditions that might ensue, rather than be forced to participate with hastily made and immature plans in the rush to be first on the market when the hoped-for time arrives? In other words, why not have complete plans on file in a safe-deposit vault along with deeds to the property? If you must be a coward be ready to follow when a brave leader gives the command: Forward, march!

Therefore, while labor worked ten hours a day thirty years ago for one dollar and a quarter and building cost was at least as high as to-day, I do not believe that ten years from now it would be surprising to find labor working but seven hours a day and receiving ten dollars, with materials proportionate, and likewise find building costs still within economic bounds for safe investment. I do not believe that there will be more than a slight reaction; costs will steadily advance, as they have during the period under discussion; in the meantime taxes will go on forever. An idle lot is no better than an idle mechanic; an idle dollar is worse.

Hooverize natural resources but conscript available units in the army of progress. Drill; don't slack. Make the idle lot productive; make the idle dollar work.

APOLLO-KEYSTONE
COPPER STEEL
Galvanized
Sheets

Highest in quality and rust resistance. Unequaled for Culverts, Flumes, Tanks, Roofing, Siding, Spouting, and all exposed sheet metal work.

We manufacture Sheet and Tin Mill Products of every description—Black and Galvanized Sheets, Corrugated and Formed Products, Roofing Tin Plates, Etc.

AMERICAN SHEET AND TIN PLATE COMPANY, Pittsburgh, Pa.

PRIVATE TEACHING
IN
ELEMENTARY AND ADVANCED DESIGN,
RENDERING AND SKETCHING
Personal and by Mail

By Prof. D. VARON, D. P. L. G. F.
Author "INDICATION IN ARCHITECTURAL DESIGN"
Write for Prospectus
309 Broadway, Tel. Worth 2946

BIND YOUR COPIES OF
ARCHITECTURE
The Title-Page and Index for Volumes 37 and 38, January to December, 1918, of ARCHITECTURE are now ready and will be mailed without charge to any subscriber upon request.
Address CIRCULATION DEPARTMENT
ARCHITECTURE
597 Fifth Avenue New York City

THE NEW TOWN HALL, MILFORD, CONN.

Tracy & Swartwout, Architects.

ARCHITECTURE

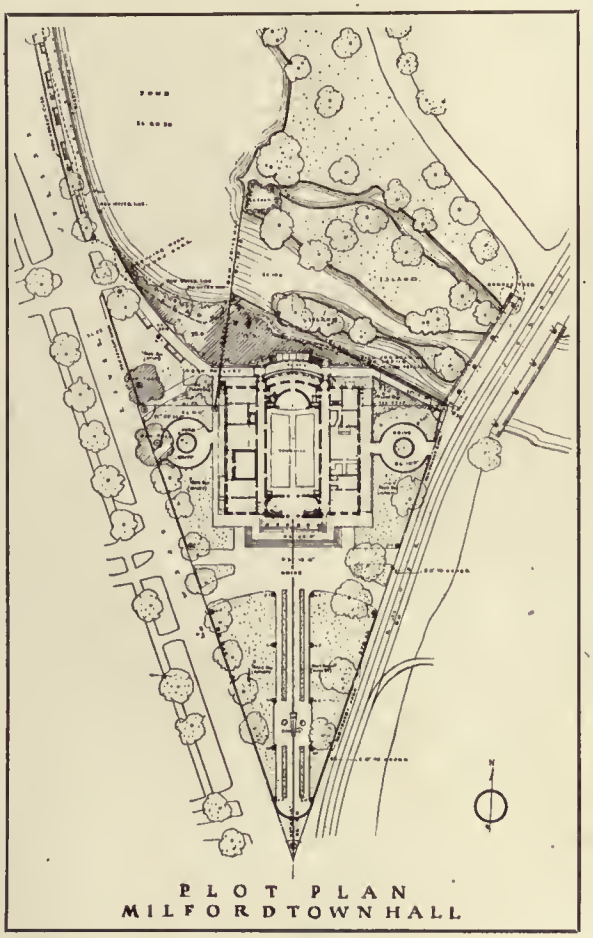
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXIX FEBRUARY, 1919 NO. 2

The Town Hall at Milford, Connecticut

By Egerton Swartwout

SOME four years ago the town hall at Milford, Connecticut, was destroyed by fire. It was an interesting old structure, familiar to all who motored between Bridgeport and New Haven, and was really composed of two buildings which were joined together and connected with a portico of wooden columns. It stood in the centre of the town on the main high road, in a triangular park or heater-piece, through which ran a small river which was dammed back of the building and formed quite a good-sized pond. Milford is one of the oldest of the Connecticut coast towns, having been founded as early as 1639, taking its name from an old mill which stood on the little stream, somewhat below the site of the town hall. According to the records, the first town hall in Milford was a small frame structure built in 1645, and since that time there have been four other halls, including the one illustrated in this number of ARCHITECTURE, the second being built in 1734, the third in 1758, and the fourth in 1832. All of these buildings stood on the identical site of the present structure.



PLOT PLAN
MILFORD TOWN HALL

When the old building burned in 1915 there was a divergence of opinion among the townspeople as to just where the new town hall should be built. There were many who favored the old site for historical and conservative reasons, but there were others who thought that it would be better to leave the old site unencumbered and turn it into a park, placing the new building at the extreme corner of the lot on the other side of the pond and on slightly higher ground. The committee to whose care was intrusted the erection of the new building adopted a very wise and at the same time unusual procedure. Having decided that a competition was necessary, they resolved to have the question of site settled by the competing architects before the competition was held. So one rainy, cold morning in early spring some eight of us assembled in Milford and solemnly marched around the site, and unanimously came to the conclusion that it would be the height of folly to consider any other but the original location, on the ground that there was not room enough in the corner of the property to place a satisfactory building, nor was the grade level enough at that point, and that a building so placed would lose the long central approach which was such a striking feature of the old site. The building committee unanimously sustained this decision, and the competition was held on this basis. I think this is the first time on record that such a procedure has been adopted, and I mention it particularly here because in my opinion this precedent could have been followed very advantageously in many other competitions in which I have participated. If the competitors had been given the alternative of either site, it would have made the judgment extremely difficult, because the solution of the problem would not then have been limited merely to the requirements of the building but would have been complicated by the addition of the vexed question of the selection of the site.

The problem was relatively simple, the main feature naturally being the large auditorium or town hall proper, which was to seat seven or eight hundred people and be provided with a balcony and a small stage. There was also to be a large room for the town court, with the judge's retiring-room and a room for the chief of police, connected with the police lockup in the basement. There were also to be accommodations for the administrative officers of the town, the board of selectmen, the town clerk, the assessor, and the judge of probate. The competition programme as drawn rather suggested a two-story building, and such a building would certainly have been more economical and more easily contained in the very scant allowed cubage than the one-story type. It seemed to us, however, that there were very vital objections to the two-story proposition. It either meant that the town hall would be placed on the second story and that a relatively great number of people would, in case of fire, be some twenty feet up in the air, or else that the comparatively

small number of people who were using the building every day would be compelled to walk up a flight of stairs some thirty or forty feet high. Unquestionably, the one-story type was least objectionable; there was plenty of room on the lot for it and it seemed to fit in better with the surroundings, and we found that the problem treated in this manner resolved itself into a perfectly logical and simple arrangement.

The auditorium or town hall proper was the largest room, and on account of its balcony, necessarily the highest. The natural scheme was to put this room in the centre of the building, carrying it up above the roof of the wings. In this way clearstory lighting could be obtained, and the other rooms arranged themselves in two or perhaps three natural groups, the largest and most important of which was the town court and its dependencies. It seemed essential that this group should be kept separate as much as might be from the rest of the building, and yet it seemed difficult to introduce a separate entrance on account of the scant cubage allowance. However, it was perfectly feasible, by the introduction of a gate in the side corridor, to cut off, when necessary, the town court from the front portion of the building, access to the court being then through a door on the rear portico. The natural grade has a drop of four or five feet away from the west to the east side, therefore it was more logical to put the town court on the east side of the building, so that the police headquarters and lockup would be practically at the grade-level on that side. The police quarters could be entirely hidden from view by carrying a solid brick wall along the eastern side at the level of the terrace at the front of the building. The rooms of the judge and the police commissioners could then be entered through a private lobby back of the court-room and directly connected with the police headquarters below by a private staircase. In the second group were the offices of the town clerk, the assessor, and the judge of probate. In the competition programme these offices were to connect with a large vault which would be common to all, and this innocent little clause proved one of the most difficult features to arrange in the whole building, and like many other similar difficulties was found later to be entirely unnecessary, as the committee themselves afterward suggested that there might better be two vaults, one for the town clerk and judge of probate and another for the assessor, and this change made capable of adoption the perfectly simple and logical arrangement indicated in the little sketch plan. The selectmen's rooms were then placed in the east wing, at the right of the entrance, exactly filling in the space left in this wing after the town court had been provided for. The result of this arrangement is that the auditorium is the central feature of the building, on the main floor and easily accessible to the public. It can be cut off from the rest of the building and need not be heated except when required. It is entered directly from the front portico and has exits into the side corridors and from the stage directly to the rear portico. In case of fire the hall can be emptied from all sides within a very few minutes.

Detail in selectmen's room.

In the competition programme the style of the building was left to the competitors, with the suggestion that historical tradition and the propinquity of two interesting old wooden churches might make advisable the selection of what is known as the colonial type. The site definitely calls for a dominant central feature. The main high road branches in the shape of a Y directly in front of the building, and the main axis is on the line of the high road, so that a pedimented portico is practically demanded. The cupola is such a distinctive colonial form for buildings of this character that its use seemed absolutely essential. The amount of money at the disposal of the town was not such as to warrant the thought of marble or even stone columns, therefore following the precedent of the old work the columns, cornices, balustrades, and cupola are all made of wood, painted white. The walls are of what is known as Harvard brick, laid in Flemish bond, with a certain proportion of black headers, and the entrance-steps, column bases, keyblocks, and sills are of white marble.

While it might be said that the building is colonial in type, it is certainly not a copy of any existing work, nor has it been thought necessary to respect the limitations which were imposed on the colonial architects by the lack of adequate material or by their relatively slight experience in monumental work. I presume the treatment that an architect of those times would have adopted would have been the usual two-story treatment of the central hall. The entrance-door would have been carried through on the level of the first story window-heads, and there would have been square-headed windows in the second story of the auditorium. Instead of that, we have carried the cornice of the wings through under the portico as an impost, and the great entrance-door, which is fifteen feet in width, becomes thereby proportionate to the size of the portico. Another departure from strictly colonial ideas is the treatment of the clearstory windows. There are six of these and they are semicircular in form, arranged somewhat after the manner of those used in Roman days. By this means much higher and bigger windows are obtained than could have been had if the cornice had been carried through unbroken, and a more interesting fenestration has been secured. In this connection there is a rather interesting piece of detail at the intersection of the cornice of the portico with the cornice of the main building. The portico cornice has quite a projection and is mutular in character, and it is quite evident that a cornice with such a projection would not do at all for the treatment over the semicircular clearstory windows, the successful treatment of which requires a simple cornice with a very flat projection, more in the manner of a band course than an actual cornice. Consequently, in order to reduce this projection the pilaster back of the end column of the portico was set back from the corner of the building about a foot, and the corona of the portico cornice carried through unbroken around the auditorium, the difference in projection being taken up by the foot break above mentioned. This makes a very natural and I think successful solution, and is not at all noticeable in the actual structure. It might

be worth noting in this connection that the cornice over the pediment is treated in a manner similar to that in the Greek temples, that is, the pediment cornice has not as much projection as the cornice below and is simpler in form, the mutules being omitted. This naturally necessitates setting the tympanum beyond the frieze face, in this case about five or six inches, but here again this divergence from the customary is not noticeable in the building. Those who have been fortunate enough to visit Dublin may remember the treatment of the entablature of the Custom House, which, with modifications, is the prototype of the cornice in this building.

Side of building.

Directly back of the portico is the vestibule, from which opens the auditorium, and in this vestibule are double self-supporting stairs leading to the gallery, which are shown in the illustration. (See Plate XXVIII.) These stairs are made of reinforced concrete, with white marble aggregates polished, the treads being of white marble. The balustrade is extremely simple and the whole effect of such a stairway is naturally dependent upon the care with which the curves are worked. Some seven or eight years ago we built a somewhat similar stair in a little library in Stamford and made use of a method of construction which since then has been used by us quite a number of times, and undoubtedly by others, but which, though now perhaps well known, may be worthy of description. From a carefully worked-out drawing at three-quarter-inch scale a plaster model of the complete staircase is made, and the curves of the strings and soffit on this model are carefully worked over until they present a perfectly continuous and unbroken line. From this model as a basis the rough form for the concrete stairs is prepared, the top of the form, which forms a reverse template of the soffit of the stairs, being made on wooden supports in cinder concrete, trowelled smooth. It can be easily seen that it is an absolute impossibility to reproduce properly in wood the warped surfaces of such a soffit. The wall strings and face strings are made of floor boards laid vertically, built up drum-fashion and notched to show the riser face. If this preparatory work is done carefully and care taken to keep all unnecessary false work out of the line of vision, a very good idea can be gotten of the curves and the lines of the soffit from above and of the strings from above or below, and any requisite corrections can easily be made in the form. In other words, the forms are modelled full size. After the work is set and the forms removed the aggregates should be rubbed and polished by hand. Unfortunately, in this particular operation, the work was done by a machine polisher, which proved unreliable and unsatisfactory.

The main auditorium is a room about forty feet by ninety, and will seat about seven hundred people. It is well lighted by the semicircular windows before mentioned, and I am glad to say that the acoustics are excellent, although this could only be expected, as the work had been laid out under the direction of the late Professor Sabine, of Harvard. The semicircular ceiling of the niche which forms the stage is covered with acoustical felt, and the same felt is also used on the rear wall of the auditorium. This felt is covered with unbleached muslin stained a soft purple tone, which is draped and held in place by plaster ornaments which are gilded, and it is quite interesting to see the rich effect obtained by this very simple material. Unfortunately, on account of the light conditions, this does not show very clearly in the photograph of the interior of the room. The stage has no curtain and is not intended for theatrical performances, the hall being used for town meetings, school exercises, lectures, and other similar entertainments. The offices and corridors throughout the building are generally treated in a very simple manner, although an attempt has been made to keep the same feeling and character throughout the entire building. The corridors are vaulted and the doors are of mahogany. The woodwork is pine, painted white, with the exception of the town court, which is in oak.

One rather interesting feature in connection with the building came up in the design of the hardware. We had specified special hardware with the seal of the town of Milford in low relief on the knobs. When we came to have this work modelled, it was found that the town of Milford had no seal, and we were faced with either the abandonment of the scheme or the production of a seal that would be suitable to the town. It seemed to me certain that such an old town as Milford must have some historical records which would be of value in the design of the seal. The matter was brought to the attention of the citizens and resulted in a large number of letters from old residents and the unearthing of a great many documents that had hitherto been unknown. It was found that the original survey of the town property had been made by Robert Treat, and that Robert Treat used a seal which was octagonal in form—very unusual and very interesting. It was also found that in some of the old deeds there was a seal or initial used composed of the letters M F united; also that when the original property was bought from the Indians the deed was signed by Anawastae, the local Indian chieftain, with his mark, which was supposed by some to represent a bow and arrow. If the curious little wiggle that was given me was really meant to be a bow and arrow, I have a still lower opinion of the artistic abilities of the aborigines than I had before, but, in any event, it was an interesting little bit and was incorporated into the design. The result, as the illustration shows, was extremely simple and really very effective, and was formally adopted by the town at a town meeting.

The Writing of Specifications

Care and Special Knowledge Essential—The Importance of Definiteness—There Should be No Room for Doubt

By David B. Emerson

IN the present seeking after efficiency and system in all lines of architectural effort, the architect's specification must needs have its inning.

Working drawings have been improved wonderfully of late years, but specifications, unfortunately, have not kept pace with the steady march of improvement.

Many of our leading architects, whose drawings are above reproach, still continue to send out specifications that are of little practical value to the contractors; in fact, in some cases they are almost useless.

An accurate, carefully written specification will do much to overcome many of the troubles which architects have with their buildings, reduce the number of extras, prevent misunderstandings, and, above all, in contracts which are let by competitive bidding, get lower bids and oftentimes save expensive revision of drawings when bids run too high and something has to be done to reduce the cost.

Although in these times draughtsmen are both numerous and capable, good specification writers are comparatively few in number, and a great many of our most able office assistants know very little about that quite essential part of an architect's work, the writing of specifications, and for the most part show little or no inclination to learn.

The reasons for this condition are obvious. In the smaller offices the architect frequently writes the specifications himself, therefore the assistants have no part in it. The opportunity to learn much about the subject is limited, as our architectural schools are obliged to crowd so many essentials into a short four years' course that the subject of specifications can only be briefly touched upon, and for those who may wish to take up the study of the subject after finishing school the number of books on the subject are few, and the really valuable books are only a very small portion of that few.

It is not the intention of the writer in this short article to tell all about specification writing, mostly because he doesn't know it, and also because the subject is altogether too large a one to be treated to a finality in one article; but for the benefit of those younger members of the profession who may wish to learn something of the subject, I will detail some of the points which I have found valuable in writing specifications, and some errors which I have found in my own and in other men's specifications which may be avoided.

The two first and great essentials of a really good specification are completeness and brevity; every point to be covered, and no unnecessary verbiage to confuse the contractors and hide the real meaning of the various clauses of the specification.

A specification should be so written that in case of dispute it could be taken into court and stand the test of litigation successfully.

Right here let me impress upon the reader the value of the liberal use of the word "all." Wherever it is possible specify "all." As in excavation, say: "The contractor shall do all excavating required to complete the work, etc.," and there is no room for quibbling over how much is to be done or included in the contract.

In writing a specification, one of the first essentials in obtaining the best results for all parties concerned—the owner, the architect, and the contractor—is to arrange the work of all trades as nearly as is possible in the order in which the building is constructed; also to have all of the work which is to be done by any one contractor arranged in direct sequence, as it is not fair to assume that a subcontractor will read all through a long specification to find any part of his work which may have been written into some other part of the specification.

In writing the specification for any one trade, always specify the materials and workmanship first, that the contractor may know what he has to furnish; then specify what parts of the building it is to be used in, and he can tell how much he has to furnish.

Careful checking after writing is very essential, as many contractors are only too willing to take a contract, knowing full well that there are important items omitted in the specifications, and then after signing the contract to make extortionate demands for extras.

The first part of all specifications being the general conditions, it is well to consider them first in starting to write a specification. The American Institute of Architects publishes a very thorough and complete set of general conditions which, in the opinion of the writer, should be used whenever possible, to promote a uniformity in specifications and a greater harmony between the architectural profession and the building trades.

That a certain amount of standardization of specifications is desirable cannot be denied and all movements toward that end are welcome, but, on the other hand, overstandardization is always questionable, and most all specifications which have been made up of stock clauses and by means of card indices have been failures. In the specifying of materials one cannot be too explicit as to quality, grade, etc. With lumber and timber, always give grading as called for in the grading rules of the lumber and timber associations.

In all cases where a standard specification has been adopted by the American Society for the Testing of Materials, specify that material shall be according to the society's specification.

One of the most vexing questions in the specifying of materials is that phrase "or equal to," which causes more worry and trouble than anything else in the whole range of specification writing.

If any material or appliance is so high in quality as to be accepted as a standard there is in all probability nothing on the market which is equal to it, and in nearly every case the contractor's idea of "equal to" is something much cheaper. So if a certain article is wanted and it is believed to be the best of its kind, specify it outright, because you believe that it has no equal.

With most materials where special makes or patterns are not particularly desired, it is best to follow the method of the United States Government and call for certain requirements as to weights, method of manufacture, and quality, establishing a standard of what you require and allowing any materials meeting those requirements to be used.

In private practice it is not necessary to follow that method, which, however, with the government is mandatory, as the law does not allow materials or appliances to be used on government buildings to be specified under make or pattern.

In specifying materials for any proposed work an important factor to be considered, one which many of us are prone to forget, is the satisfying of the client, which is really quite a large factor, and should always be considered, and if any particular material or appliance which is not absolutely inferior strikes his fancy or appeals to his taste it is advisable to specify it, even though it is not just what you would recommend yourself, as, after all, he is the person to be pleased. In starting out to write specifications it must be remembered that the specification writer should have a very thorough knowledge of all materials and methods of construction, both in the field and in the shop, without which it is very hard to write knowingly and clearly on the subject, so therefore the candidate for specification writing should have some experience superintending construction before attempting to write specifications.

Theatre Decoration at the New Capitol

By A. Lincoln Cooper

Instructor of Mural Decoration in the New York Evening School of Industrial Art

THERE is a peculiar problem presented in determining upon and executing the style of decoration to be followed in a playhouse of such magnitude as the new Capitol Theatre now building in New York City—the theatre that is to be the largest playhouse in the world.

Upon going over the various plans, details, etc., the writer's first consideration was the vastness of the interior, as a style of decoration, no matter how effective in a smaller and more intimate structure, would in all likelihood miss the warmth and responsiveness so vital in such a large ensemble.

The ideal choice of a style and scheme under such conditions gives rise almost to the paradoxical—they must adequately enfold an expanse of interior and at the same time counteract the coldness that is bound to result from area.

To accomplish this the architect with the decorator decided upon a color scheme combining warmth and brilliancy. The general tone will be a café au lait, a shade preeminently beautiful when enriched with gold and is especially adapted to the Empire Period style of decoration with its small delicate details. This scheme will bring to the whole a warmth and responsiveness so essential to an abode of amusement, while the general style will avoid any fragmentary effect so likely to develop in an area of such large proportions. The scheme contemplated is admirably responsive to both the architect and decorator, and the difficulty of treatment is greatly reduced by the Empire style, in which the variety of form permits a wide range of choice.

In deciding upon the café-au-lait color scheme, with ornament enriched with gold and glazed to strike a harmonious chord, the nature of the woodwork of the large interior was fully borne in mind. The woodwork is of a rich old walnut and antique oak, especially treated, like the old Georgian rooms, in a manner whereby the mellow tones and finish bring out the natural glory of the wood. In striving to harmonize the rich effect of the woodwork with the color scheme, and still maintaining a distinct virility of each, the desired effect is one akin to the feeling felt in gazing upon an old master. The hangings of velvet and silk have been chosen with great care in order to blend in a manner to avoid the slightest semblance of discord.

The dominating consideration in determining upon the Empire style of decoration was the decorator's desire to carry out the architect's conception of dignity and to depart from the academic coldness which prevails in certain periods, and to instil instead a finesse of character that at once breathes a more intimate environment, at the same time avoiding an appearance that might suggest the simple process of transplanting. Not that the writer makes any pretense of attempt in developing a new style, but that full cognizance of the exceptional subject—the largest theatre in the world—demands a treatment that will encompass the full purpose behind such a structure. The theatre depends pre-eminently upon psychological effects, and to genuinely aid in properly meeting this conception the structure itself, and particularly the interior decorative scheme, must vie with the stage picture in engendering, and maintaining the audience in, a receptive mood. To this conception the interior decoration of the new Capitol Theatre will be dedicated.

The grand manner and splendor of Louis Quatorze has passed, and instead of the stateliness and court beauty thus effected, the Empire, with a severity to harmonize with a vast subject, gowned in rich velvets, will strive for an artistic reality rather than a fictitious royalty.

It is rather premature to present a full description of the whole decorative scheme, and this article is only intended to convey a faint general idea as to what is contemplated. The theme of the mural paintings is still in the embryo, but it can already be confidently stated that these too will harmonize with the whole and convey a symbolical conception appropriate to the purpose and utilization of the unique structure.

The grand auditorium is one of great dignity, breathing an atmosphere and giving a profound impression of vast spaces, and it probably represents the culmination of the architect's extensive experience and knowledge, for Mr. Thomas Lamb, the architect, brings to the theatre, to which he has devoted a specialized line of thought, an abundance of ideas rich in conception and unsurpassed in execution.

Some of the special features of the theatre that might be of passing interest, although not directly involved in any description of the interior decoration, are a wonderful organ, artistically constructed and designed to fill the vast auditorium with music of a nature surpassingly supreme; rest-rooms for both sexes, designed and appointed in a way to meet the respective tastes for luxury, beauty, and comfort.

It would be a lack of appreciation to omit mention, in connection with the decorative scheme and the interior furnishing, of the valuable aid given by the vice-president of the holding company, whose suggestions have uniformly indicated a natural genius for interior decoration; also Mr. Lamb's happy choice of his supervising architect, who has shown great ability in directing and carrying out this big project. In summing up the entire operation, the writer feels that it would have been a very hard task indeed to form a better organization of contractors and tradesmen to carry out the intent and spirit of the work.

Garden Architecture and Sculpture

By H. A. Caparn

From a Lecture Given at the Metropolitan Museum of Art, March, 1918

GARDEN architecture and sculpture really contain four subjects, each one of which might occupy an article or be expanded into an interesting book. The four would be "Architecture in Formal Gardens," "Architecture in Informal Gardens," "Sculpture in Formal Gardens," "Sculpture in Informal Gardens." But they are all akin, and it appears to me best to attempt to trace some of the characteristics they have in common.

Cain's lioness, Central Park, New York.

I use this word garden in its more extended sense, customary on the continent of Europe, where it seems to describe any space treated for beauty and used for pleasure. Here we usually think of a garden as a more or less restricted place made primarily for the display of flowers; but there is no fundamental difference in the principles of design of flower and flowerless or of large and small gardens; the difference is one of scale or proportion and consequently of feeling.

Garden architecture does not include the house, palace or château, or other building of which the garden is an adjunct or extension, an outdoor room or rooms, in fact, but only those structures within the garden that serve some of its purposes, wholly utilitarian or mainly sentimental, entrances, pergolas, arches, shelters, summer-houses, grottos, gazebos, tool-houses, temples, pools, and cascades. Garden sculpture would include statuary, hermæ, fountains, well-heads, and even seats and vases. Some of these, of course, contain both architecture and sculpture, fountains, for instance, often massively built and elaborately sculped.

Villa Albani, Rome, coffee-house.

You will observe that not one of these things has been brought into garden design excepting to supply some real need, to fulfil some use of which it is an elaboration or justification. It is not necessary, for instance, to explain or defend the use of shelters in gardens of all times and countries, and the uses of vases, seats, pools, and well-heads are too obvious to be mentioned. None of them was introduced for mere whim or caprice, or without knowing why, as has often been the case in gardens of later styles and periods. Sculpture is the most attractive of all garden ornaments, and this is surely use enough, and when it is well done and well set it has a vitalizing power that nothing else can equal. It is the stone inhabitant of the garden, its presiding genius, but sometimes, unfortunately, its clown. We need not wander very far to find examples of this. The hermæ, those heads on stone posts, decidedly popular over here, have not yet gotten rid of their imported look and seldom appear to be really naturalized. It is difficult to look at them and forget the Fourth Avenue sidewalk where they seem most at home, however charming they may be in their native climate. They were originally boundary posts which the Roman farmer used to amuse himself by carving with the head of Hermes, the god who presided over termini or boundaries, and which the garden sculptor, always on the alert for new motives or subjects, elaborated so ingeniously. I wonder how long it will be before the American farmer amuses himself by whittling the tops of his fence posts into the likeness of his favorite president, whether of a ball team or of the United States?

To consider first gardens in the formal or architectural style or manner as by far the oldest and containing beyond comparison the most numerous and best examples of garden architecture and sculpture, it would be consistent to speak not of the architecture in them, but of the buildings, for the entire garden is a work of architecture, an unroofed extension of the building on which it depends, and not differing in principles of design from one of its apartments. Its structural lines are straight or radial curves; its boundaries are walls or hedges, vegetable masonry; its rows of trees or bushes, clipped or unclipped, correspond to columns or statues. Its flowers, foliage masses, and vines are not structural, but decorative vegetable carpets, tapestry, or curtains. It is the character of the masonry, carpentry, and sculpture to be so conspicuous as to dominate the garden as a rule, so that the foliage and flowers, whether formalized or not, seem to lead up to it and become a setting or investiture.

It was in the Italian gardens of the Renaissance, themselves the descendants of the Roman gardens of ancient times and the prototypes of the great gardens of other

countries, that architecture and sculpture attained their highest development. All the conditions contributed to this perfection, including the very limitations of climate and growth. Nowhere and never has good architecture and sculpture been so easy to obtain as in Italy during the Renaissance. Nowhere does the kind of vegetation that best lends itself to architectural effect grow more varied and luxuriant. No such greens and textures unite with cheerful submission to the shears of the topiarius as in the box, the ilex, the bay, the orange, the lemon, the euonymus, and the cypress. But, on the other hand, the sultry summers are unkind to lawns, and flowers were few until modern explorers had brought the floral riches of the temperate zones to our front yards. So the designers put their strength into the exploitation of their best resources, their architecture and sculpture, stone and vegetable. Their gardens were, in reality, compositions in architecture, animate and inanimate, with water in every variety of motion to vitalize them and counteract by its unceasing sparkle whatever sense of gloom the towering masses of dark foliage might suggest. Flowers added color, gayety, and spice but were not really essential. But the stonework, the water, and the all-embracing evergreen leafage were the garden, so that it was good in winter as well as in summer, and now, after the lapse of centuries, these gardens in the maturity of their growth, and excepting where the ravages of time and depredation or of repair have gotten the upper hand, are often, perhaps, better than they ever were, for their settings or foliage frames are now mature and in their proper proportions. When they were new these gardens must have looked as raw and undeveloped as any new garden nowadays, than which, as a rule, nothing looks more raw and undeveloped. Such contemporary garden pictures as we have go far to confirm this supposition. Here is the essential difference between the old and modern gardens. The latter are imagined commonly as places for the display of flowers, and often the structure or composition takes a secondary place or is lost sight of, so infatuated are we by the fascination of modern flowers, and the garden ceases to be a work of art and becomes a nursery.

Frejus monument, Turin. A style of garden architecture for illustration, not necessarily for imitation.

Garden buildings are mostly shelters, taking every form from the rustic summer-house to the temples of Love or Diana, those beautiful circles of columns supporting a roof so popular with garden designers, especially the French, or the elaborate coffee-house of the Villa Albani at Rome, or the temples of Æsculapius, or buildings under any other name that gave an excuse to put up a costly and glorified rest-place or shelter from the sun or occasional showers. The pergola is of this kind, too, a sheltered walk, and when well done, its own excuse for being, but, unfortunately, done too much and too badly so that these massive and naked structures tower like stark skeletons to the ruination of many an otherwise good garden scene. The first condition of a pergola, like any other structure, is that it should look credible, have an apparent reason for being; it should not only support the vines for which it exists, but it should lead from somewhere to somewhere else. Once in a while you see one of these things that reminds one of a corridor taken out of a building or a tunnel from a railroad and dropped casually in a forty-acre lot. It is of interest to mention that we have a fairly good claim to consider the pergola an American development, although, as you no doubt know, there were plenty of them in the villa gardens of ancient Italy, and they have been built in one form or another ever since. You can see in many an American farmyard a grape-arbor made of a row of uprights supporting horizontal pieces and connected by braces, often not even planed or painted; and this is the simplest form of pergola and the easiest to build, the prototype of these structures which we have developed, perhaps, more commonly and elaborately than any one else.

Villa Lancellotti, Frascati. A glorified retaining wall.

These are the usual structures of architectural gardens of all periods. But there were

Vue aux buttes, Chaumont, Paris. A building of the Temple of Love type.

others very common in the gardens of the Renaissance, more interesting as illustrating the point of view and the sense of humor of the times than their architecture. Such are those mentioned by Montaigne, who visited the Villa Pratolino, six miles from Florence, which was made by the Grand Duke Francisco I for the famous Bianca Capello, who afterward became grand duchess. He describes a grotto where the movement of water made music and harmony, causing various statues to move and doors to shut, animals to plunge in and drink, and other devices. He says: "In one moment the grotto can be filled with water. Every chair squirts it over you, and fleeing therefrom up the steps of the villa, they can, if they choose, start one thousand jets and drench you to the skin." These secret fountains still remain in many Italian gardens. They were useful, not merely for practical jokes, but for moistening the stonework heated by the sun. There was also a representation of a fortress besieged by cannons and arquebuses shooting water and other devices. There is a letter extant from an architect named Traballesi written to one of his ducal patrons under date of May 21, 1587. He says: "I have a model for a jest to be constructed in a pond. In the midst of the pond to make a little island of timber with a bridge in the form of a raft where one could go to eat or for pleasure, and when eight or ten people are gathered together thereon, the said raft descends to the bottom, leaving the said abandoned ones upon the island. Next, the island itself begins to descend, and slowly sinks, for the greater torment of those who find themselves upon it. When it is gone a certain distance it slowly begins to ascend again, and the bridge also returns so that the people should be able to go into the sunshine and dry themselves." Whether this thing was ever constructed or not I do not know, but the mere fact that it should have been proposed sheds an interesting light on the point of view, and especially on the notions of humor, of the period. It was probably not built, for the reason that it would only have worked once, for the news of the ducking of the first party of poor wretches would travel so fast and far that it is unlikely that a second party could be found to walk into the trap. But perhaps garden owners of those days, as now, were troubled with uninvited visitors who used their opportunities for depredation when they thought no one was looking, and these were but means of deserved retaliation. In speaking of garden eccentricities in sculpture mention should not be omitted of the enormous giant representing the Apennines constructed by Giovanni de Bologna at the foot of which stands the Villa Pratolino above referred to.

One of the differences between the gardens of the several nations appears in the use of architecture and sculpture. The basic principles of their use do not differ, but in Italian gardens buildings and statuary were much more numerous than in France or England, and in Italy and England they have a different and more intimate effect than in the great expanses of the grand style which found its climax in the works of Le Notre. This is due, not to differences in the style of architecture or sculpture, but to the sense of enclosure or separation from the outer country sought by the Italians and English, while the typical French gardens are extended as far into the landscape as possible. At Versailles in midsummer evenings the boundary on the east is the palace, on the west the setting sun, beyond comparison the most magnificent garden ornament in the solar system, and the emblem of Louis XIV for whom this composition was created.

In the informal or natural style or manner, with its phases of the gardenesque, naturalesque, and so on, called on the continent of Europe the English garden, because it was invented in England in the beginning of the eighteenth century, the use of architecture and sculpture seems to vary with the taste or caprice or misunderstanding of the designer. No art has passed through so many stages of whim and misunderstanding as this. Yet it is an art of incorrigible popularity, for almost every front yard and public park in the country is done in this manner. That most of them are not done well is not the fault of the man-

Bassin d'Apollon, Versailles.

Le petit Trianon, Versailles. Green walls and cornice of foliage.

ner. Of the multitudes who have professed and practised it, few seem to have understood its real purport and meaning. Its first notable professor, Kent, seems to have looked on buildings as of secondary importance, to be suppressed rather than displayed. Many of his successors, on the other hand, used them as main objects in their compositions, Chinese pagodas, Indian or Greek temples, or sham ruins. After many vicissitudes these things went out of fashion because they were felt to be false in sentiment. The elder Olmsted in one of his park reports expressed his regret that it was necessary to put buildings into parks, and when one contemplates some of the structures they put up in his parks it is not difficult to understand him. The fact is that this style is not dependent on buildings for its motive or inspiration. Informally composed scenes can, and very often do, exist without any building visible in them, and there are many admirable examples in our New York parks, Central, Prospect, and Morningside. When a conspicuous building is put into an informal scene it dominates it, and the scene becomes a mere setting instead of existing for its own sake. Such a building is the Temple d'Amour at Versailles. An excellent example of a building which becomes part of the landscape instead of overpowering it, created for the landscape rather than for itself, is the familiar bridge over the lake at the southeast corner of Central Park, and there are many of similar feeling in the parks of Boston. As for the sham ruins, once so popular, perhaps the most notable is in the Parc Monceau at Paris, which, like many other bad things in the Paris parks, is so well done that one excuses it as not really a sham after all.

Flower and foliage architecture, Tuileries Garden, Paris.

The subject of sculpture in informal settings is still in a nebulous state. Statuary set anywhere except in an architectural composition usually looks as though it had been left there to be called for later. We have plenty of examples of good sculpture placed like this, as, for instance, the Farragut monument in Madison Square. The extreme popularity of sculpture in this country, exemplified in the vast quantity of local politicians in perfectly good bronze and soldiers in granite, worth, in these times, at least six dollars a cubic foot, makes one appreciate the force of the Biblical injunction against the manufacture of graven images and regret that the artistic taste of those who thus commemorated the heroism of the dead was often not equal to their devotion. The worst of these things is that many of them occupy the best sites in town. Our city fathers are so impressed by sculpture that they will hasten to deliver their most precious open spaces to any one who will provide so many tons of stone or metal fashioned into the semblance of a human being; and these sites are chosen, as a rule, not for any reason of appropriateness, but because they are so conspicuous, thus, as it were, not merely admitting an inappropriate thing but advertising it in double-leaded type. People are not really awakened to the fact that their public open spaces are all precious, and many of them historic, bound up with the development of the community, and that they should be very much more careful than they have been in the past to avoid cluttering them with carved encumbrances badly designed and set. We have so many precious open spaces, and nowadays so much good sculpture as well as bad that must be put in them, that it is a pity not to give more attention to the matter of setting instead of being satisfied merely to dump it in a place where the public eye cannot escape it. It is just as difficult or impossible to lay down rules for this kind of art work as for any other, but it may be worth while to point out that in informal design, just as in formal, sculpture should be placed at a focal point, which may be emphasized, framed, or even created by the proper investiture of foliage. Another way of saying this would be to point out that a statue will make a focal point no matter where you put it, and that its setting should recognize this and lead up to and frame the statue. The statue should not look too natural, that is, one should not attempt to create the illusion of a stag or a lady or gentleman scantily clad, or not at all, taking a constitutional among the trees amid the rigors of our northern climate. A statue should look, not like a man, woman, or animal, but like a statue of one, and to do this it should have a base, an artificial thing to raise it off the ground. The absurdity of the cast-iron deer, still occasionally seeming to promenade the lawn, is due not merely to its being put

Luxembourg Gardens, Paris. This is the kind of thing the gardener does to the sculptor sometimes, even in Paris.

Gounod monument, Parc-Monceau, Paris. Designed for a park setting.

Daudet, Champs-Elysées, Paris. Garden sculpture designed for informal setting.

nowhere in particular, but much more to its impossible naturalism, its attempting to look like something that it could not be, and its lack of visible means of support as an animal of metal, not of flesh and blood.

In this hasty and necessarily very incomplete sketch of a very wide subject I should not omit mention of that most popular of all collections of garden architecture and sculpture, the cemetery. Surely many of us must feel that these places are usually very depressing, not from the presence of the dead, for this proximity of those who have run their course and achieved the great adventure should not arouse gloom but reverence, but because of the ugliness and disorder. Some of the monuments are good in esign, many passable, but it is, as a rule, difficult to get an impression of any of them as a work of art because of their multitude and the confusion of it all. The trouble is partly in their number, partly in the design, still more in the inordinate size of many trying to overtop their neighbors, but chiefly to their lack of setting, of an enfolding mantle of foliage to mitigate their glare, their restlessness, and their incongruity. Cemeteries of this kind where greenery predominates and the beauty of the scene has first consideration are becoming much less rare than formerly and are, as they should be, proportionately popular and prosperous.

Garden architecture in its simplest form, Salem, Mass.

Editorial and Other Comment

War Memorials for the Times

MANY of the old ideas of celebrating a triumph of arms, of a great national uplift, of a return to peace after sacrifices and untold hardships, seem paltry and selfish in these times. The triumphal arches of Rome and of later times are, after all, the most impersonal and least intimate of memorials. They may impress future generations, and mean little or much according to their knowledge of history and a capacity to respond to the spirit of past heroic times, but as monuments, either worthy or mediocre, they are manifestations chiefly of contemporary art and design and celebrate too often the individual, not the nation. One comes to look upon them merely as a part of civic adornment, not as living, speaking expressions of human feeling and sympathy.

The great army of granite soldiers that stand as sentinels in so many towns and city squares, flanked by old cannon and pyramidal piles of cast-iron shells, are but lifeless and, alas! too often grotesque caricatures of the real spirit of the men in blue and gray they were intended to commemorate. How few, indeed, of all the figure monuments in the country erected in memory of our old army and navy are worthy of their purpose! In New York we look with pride upon the sturdy upstanding figure of Farragut in Madison Square, and on the spirited mounted Sherman at the entrance to the park. But they are rare exceptions to the generally commonplace and trivial things that have been erected in the name of patriotism. This war has taught us to look in new ways upon men, upon nations. It has brought into close relations the remotest elements of civilization, directed attention as never before to the utter helplessness of millions of mankind in the face of a great World War. Instead of spending millions of dollars in monuments, in statuary and arches, let us devote the sum to more useful and helpful purposes. Let us endow and build hospitals or add wards to hospitals for the service and ever-ready use of our soldiers and their families when they may be in need of medical and surgical care. Let us build schools for their children—schools in which the flag shall be ever in evidence and the words of men who have made our nation great, of the men who have expressed our national ideals from the beginning. Let us build town halls and libraries where records of the war may be kept as a reference, with a roster of the men who wore the khaki or the blue, with a star for those who gave their lives and make the halls to serve the purpose of meeting-places for the veterans of all our armies where they may keep up old associations and help to spread broadcast the spirit of sacrifice and of love of country that they stand for. There should be perpetual club-houses for all men who have been in the service, for those who have served either at home, over there, on the water, anywhere that duty has called them. Let us too build public baths and swimming-pools. A recent writer, Mrs. Adeline Adams, wife of the well-known sculptor and president of the National Academy, makes these suggestions, that seem to us quite in keeping with our new ideals:

"In place of memorial forms to be condemned or discouraged, expert knowledge has a rich variety of shapes to suggest; and as our sprightliest critic has somewhere said: 'Without variety, as without vision, the people perish.' A well by the wayside; a bell in a tower; a shrine in a grove or garden or church; a town clock; a beautifully designed bronze standard for a flagpole, either by itself or as an adjunct to a hall or a schoolhouse; the fountain in its myriad shapes of life and laughter; the inscribed stone seat under a stately village tree; the newly planted avenue of trees fitly inscribed; the boundary stone; a gateway or a church door; a sun-dial or even a bird-bath; the monumental bridge; the water-gate—every one of these forms and many more, simple or magnificent, may well be made commemorative of the hour and its storied meanings. Some of those who died for us were young, blithe creatures; we would have their covering rest lightly upon them, and their memorial, whatever and wherever it is, not without some sign of young joy upon it. And whether the monument be for youth or age, for the group or the individual, its true worth will be revealed, not in size, cost, or elaborateness, but in fitness, imaginative quality, spiritual content, and also, not to be forgotten, the well-educated workmanship of both artist and artisan."

We made great strides during the mobilization of our army in the effort toward a real Americanization of our polyglot population. A neighborhood club for soldiers where their families could also meet and be entertained would do more than all the local oratory that might be uttered to amalgamate our people and do away with the present dangers of racial segregation and differing languages. There could be no better way to further Colonel Roosevelt's most devoutly to be wished patriotic ideal that this country shall be a country of one language, and that language *English*. We need something bigger than merely abstract art ideas for the few in our war memorials. Let us have them humanized and made to minister to human needs and human aspirations.

The Cost of Building Materials

A RECENT interview with a large Philadelphia contracting firm revealed the fact that a new record had been established in the cost of building materials.

"The records show that in 1866, immediately after the close of the Civil War, cement was worth $2 a barrel, calcined plaster $2.50 a barrel, Roman cement $6 a barrel, fire-clay $2.50 a barrel, lime 30 cents a bushel, plastering hair 30 cents a bushel, and fire-brick $48 a thousand.

"Current prices for similar materials prevailing throughout 1918 and largely at the present time are: $3.27 a barrel for cement, $4 a barrel for calcined plaster, $3 a barrel for fire-clay, 44 cents a bushel for lime, 30 cents a bushel for plastering hair, and $47 a thousand for fire-brick. There are no quotations on Roman cement, which, with most other imported cements, has been out of this market for a number of years.

"In 1916 cement sold at $1.65 a barrel, calcined plaster at $2.05 a barrel, fire-clay at $1.50 a barrel, lime at 20 cents a bushel, and plastering hair at 28 cents a bushel. No figures are available for fire-brick, as the firm in question did not handle them in the period in question.

"It will be noted that 1918's prices are in many instances from about 30 to 60 per cent higher than those prevailing in 1866, and in some cases 100 per cent above those for 1916, the year before the entry of the United States into the World War.

"It is a curious coincidence, however, that plastering

hair sells to-day at the exact figure prevailing in 1866—30 cents a bushel."

And yet there is a nation-wide urgency to go on with general building. It seems absolutely necessary to the solving of some of the vital and insistent unemployment problems. The greater problem seems to be the one of finance, of securing building loans, and "there is no likelihood of an adequate investment demand existing until our Liberty Loans are over and our Liberty Bonds are digested." A writer in the *New York Sun* advocates the providing by the United States Government for a sufficient amount of the next loan to be allocated throughout the country where the demand for new building is urgent, and the same reloaned in such centres on building loans under the direction of regional loan commissions to be appointed by the government.

"If billions are loaned to foreign countries; if mortgage loans are made to farmers; if so-called revolving funds of millions are created to make good deficits in operation of railroads, for the stabilization of the market value of Liberty Loan Bonds and such purposes, is it too much for the government to adopt prompt and effective measures to relieve this critical situation?"

Opportunities for American Architects in South America

IT may be of rather special interest to some of our professional readers to know that there is a constant demand for copies of this magazine from various parts of South America. A number of buildings published in our pages have been made the subject of comment in the leading South American architectural magazine. The closer relation between North and South America that the war has brought about may well open the way for our architects to find a new and profitable field of endeavor. It is a widely known fact that one of our well-known firms has undertaken extensive developments in China. Here to the south of us, easily accessible, is a field of great promise.

For a Fitting Memorial to Our Soldiers—An Admirable Suggestion from the New York Chapter of the American Institute of Architects

WHEREAS, The Fine Arts Federation is to appoint a committee to consider the form to be taken by a permanent memorial to commemorate the valor of the American soldiers and sailors in the World War, and

WHEREAS, The realization of such a memorial, of whatever nature, is of vital importance to the community in that it should be a true expression of the sentiment of the citizens of New York as to form of memorial deemed most appropriate:

Be it Resolved, That the New York Chapter of the American Institute of Architects present to the Fine Arts Federation, for its earnest consideration, the following programme and plan of procedure:

That a committee be appointed to institute a preliminary competition of ideas or suggestions to be open to all citizens residing or maintaining an established place of business in Greater New York.

That their ideas or suggestions be presented in one of the following mediums:

A. In letter form.

B. In sketch form, a perspective and plan.

C. In plastic form, a model and plan.

A location or plot plan to be submitted if the idea be in the form of a structure.

As an essential part of this preliminary competition, a first prize, with possibly other prizes, should be awarded.

That the judgment of this competition of ideas be rendered, after public exhibition, by a jury composed of representative citizens. It is suggested that the jury of award be composed of fifteen members, three members appointed by each of such organizations as the New York Chamber of Commerce, the Merchants Association, the Fine Arts Federation, the Society of Arts and Letters, etc.

That the idea awarded the first prize in this preliminary competition be made the subject of a final competition.

That the winner of this final competition be awarded the commission to execute the memorial.

In conclusion, the New York Chapter feels that in this manner can best be obtained the opinion and the sentiment of the citizens of New York as to the form of the memorial.

Original Drawings at the Library

THE New York Public Library announces a most interesting exhibition of original drawings from the collection of J. Pierpont Morgan.

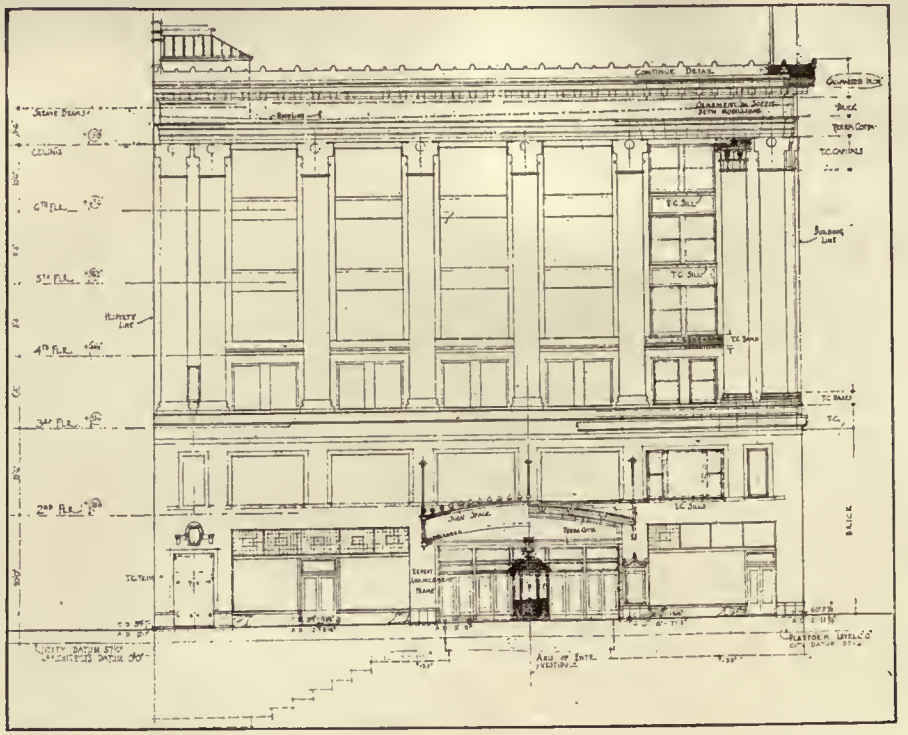
"The technical element in such an exhibition of drawings should appeal particularly to the art student. How the masters handled pen, chalk, and brush in making studies and sketches offers the student suggestion and stimulation and example. Here he may see how Rembrandt scratched and scrawled with the pen, or put in big broad washes, or brushed light lines in landscape subjects (similar to his etched ones), according to need and mood, and always with a sufficiency appropriate to the subject in hand. Or how Raphael used sharp yet sinuous lines, limited in number; the thing said, he stopped. Again, how methods are varied by the facile Guercino, or by Annibale Carracci, who made one drawing carefully in strong masses with red chalk, and another in light pen outlines and washes. How in some work all is delicacy, evanescing ultimately into weakness, while in other all is firm and vigorous, a quality eventually leading, in some artists, to exaggerated poses and hypertrophied muscular development. Some made more finished drawings: Claude and Poussin in stately landscape compositions; Correggio and Guercino (in red chalk drawings of *putti* and other subjects) and Picart foreshadowing the methods of the nineteenth-century professional lithographer; others again, in brush-washes of one or two tones, heightened with white, akin to the chiaroscuro method in engraving. There is wide variety in the use of wash. Bramantino, Annibale Carracci, Pietro Testa, G. B. Tiepolo, and others applied it lightly to give body to freely indicated outlines. Tiepolo did this with a particularly noteworthy lightness and dash, his shadows flickering in a remarkable suggestion of ever-moving life. Somewhat heavier shadows and tones appear in some work by Palma Giovane or Pordenone. Polidoro, Parmigiano, Vanni, and others carry the method quite to a finished effect, and it is the reproduction of such work that we find in chiaroscuro prints."

There are drawings by artists whom one has hardly known other than in their engravings or etchings—Bega, Berghem, Du Jardin, Campagnola, Potter, Dusart, Bloemart, Breenbergh. There's opportunity to see the actual original sketch made by Ostade for one of his etchings. Or one may trace a foreshadowing of the aquatint tones of Goya's "Caprichos" in some of the wash drawings of Domenico Tiepolo.

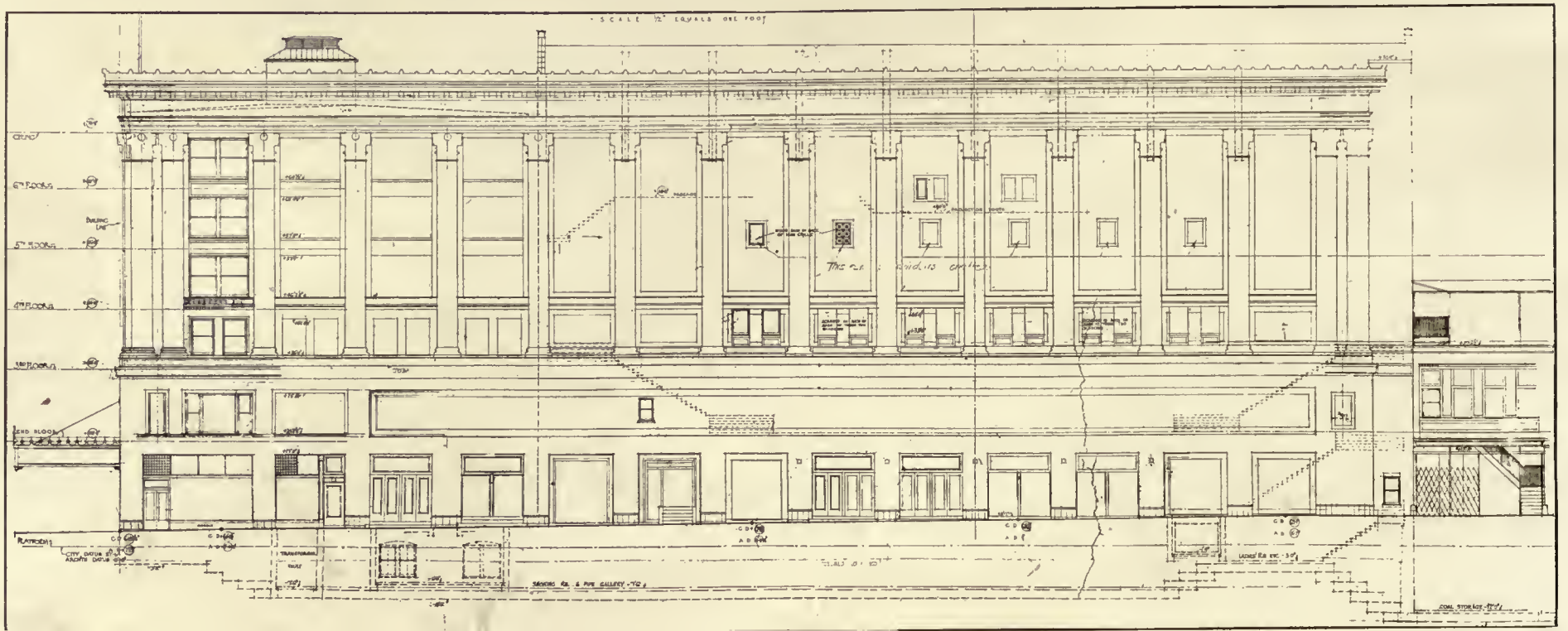
The exhibition, which has so much to offer and to so many, will remain on view in the print gallery (room 321) from the 1st of February until the end of April.

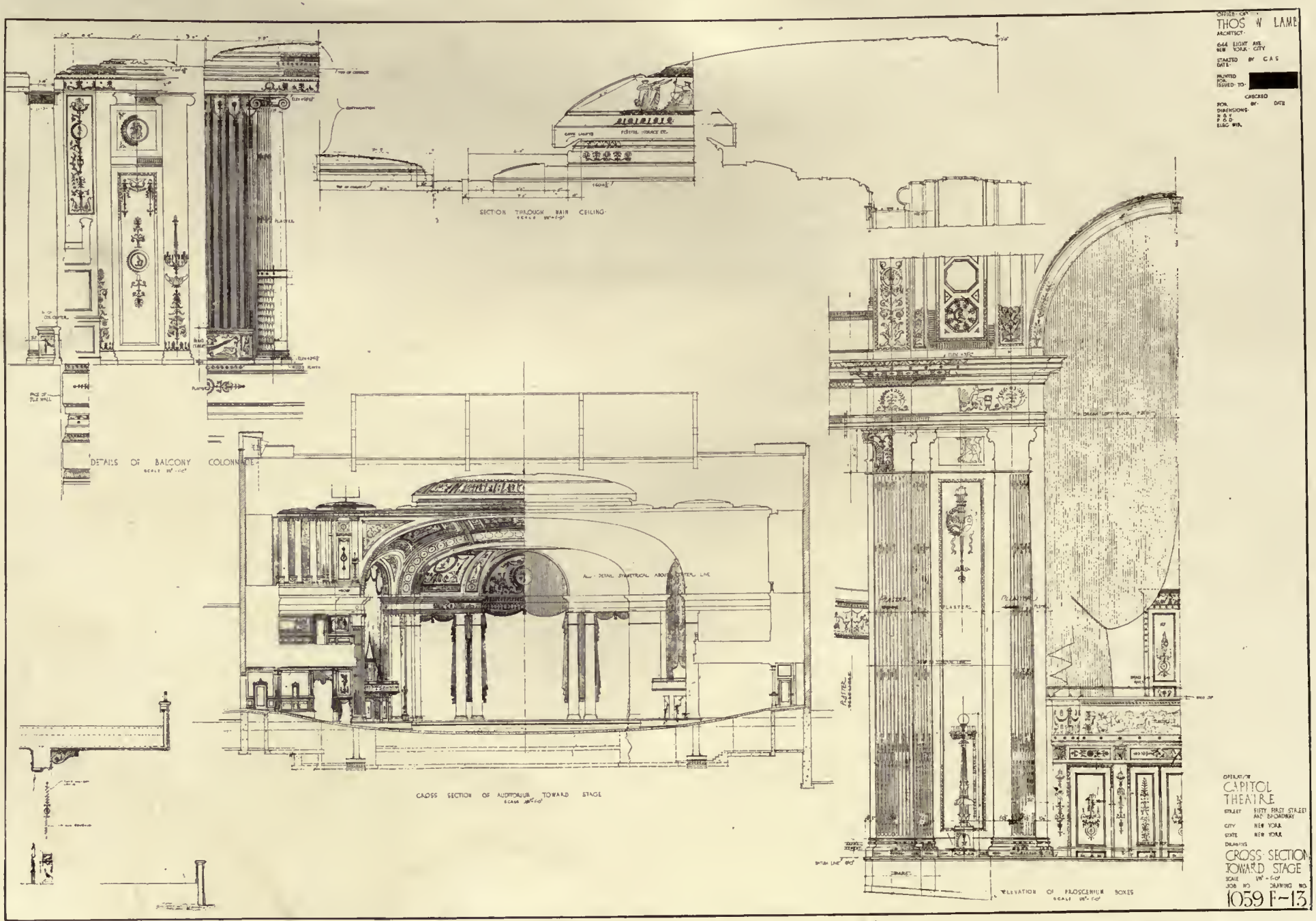
GIUSTI GARDENS, VERONA. A COLONNADE OF TREES.

THE GRAND CASCADE, ST. CLOUD, NEAR PARIS.



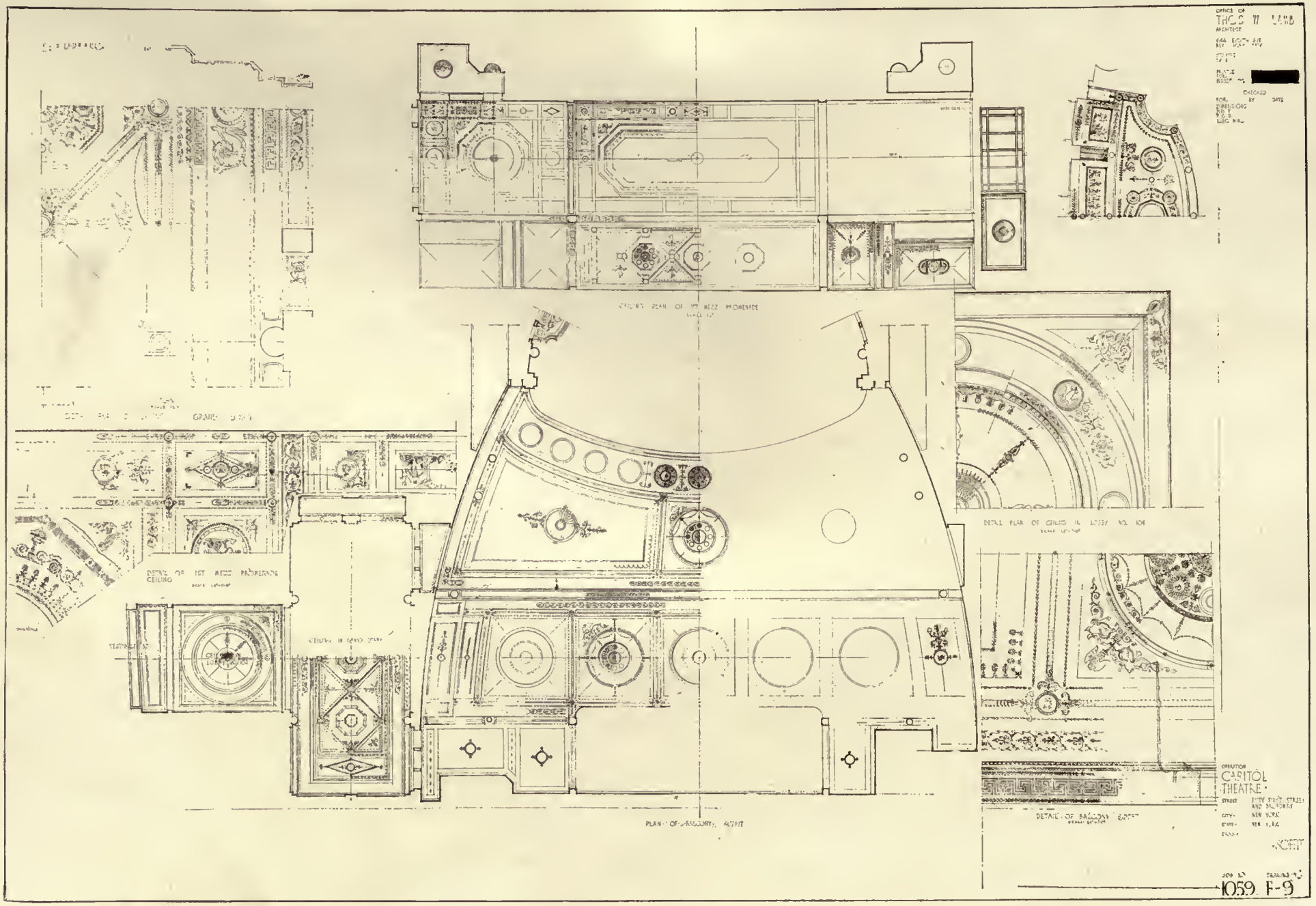
BROADWAY ELEVATION.



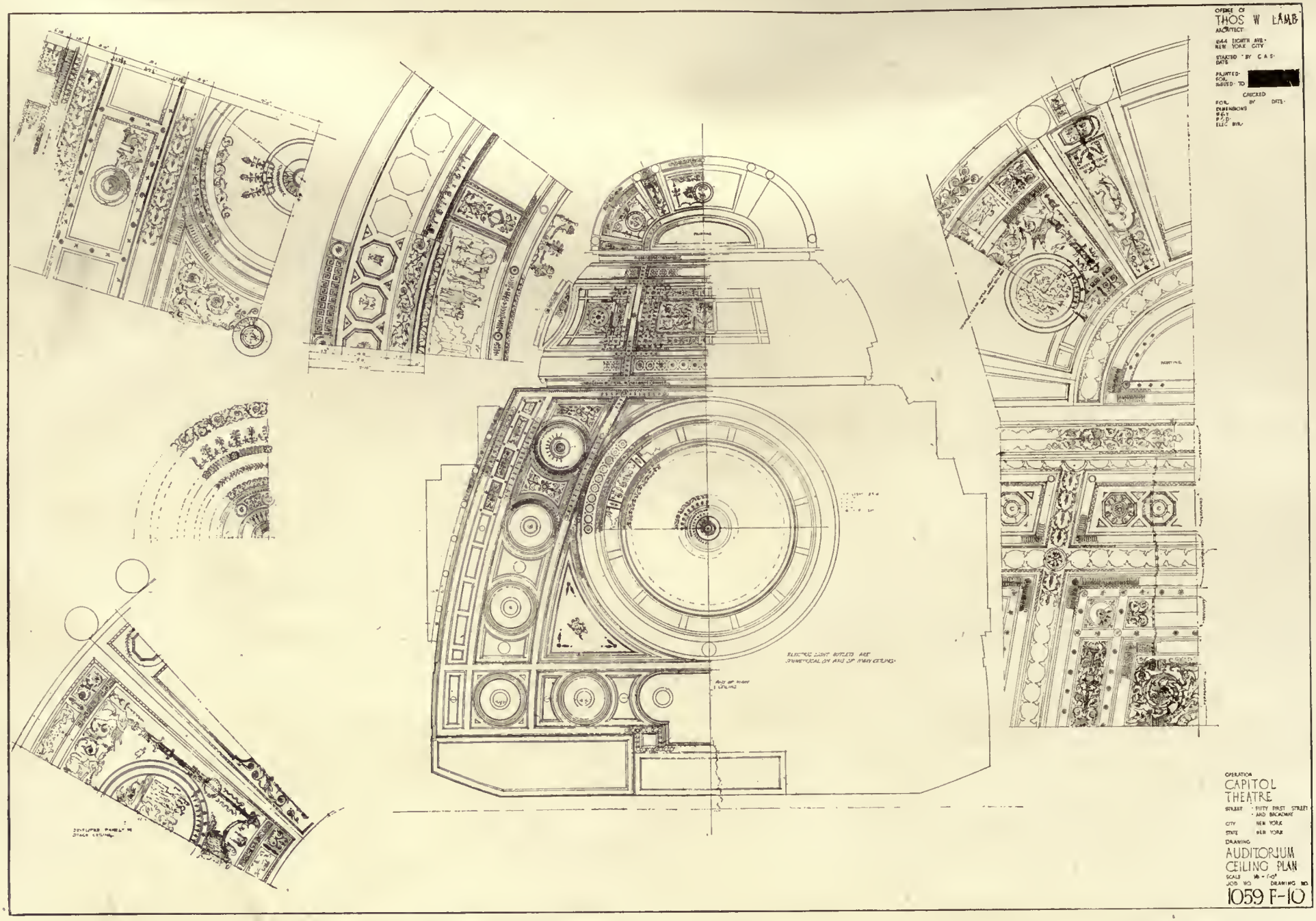


CROSS SECTION, TOWARD STAGE, CAPITOL THEATRE, BROADWAY AND 51ST STREET, NEW YORK.

Thomas W. Lamb, Architect.

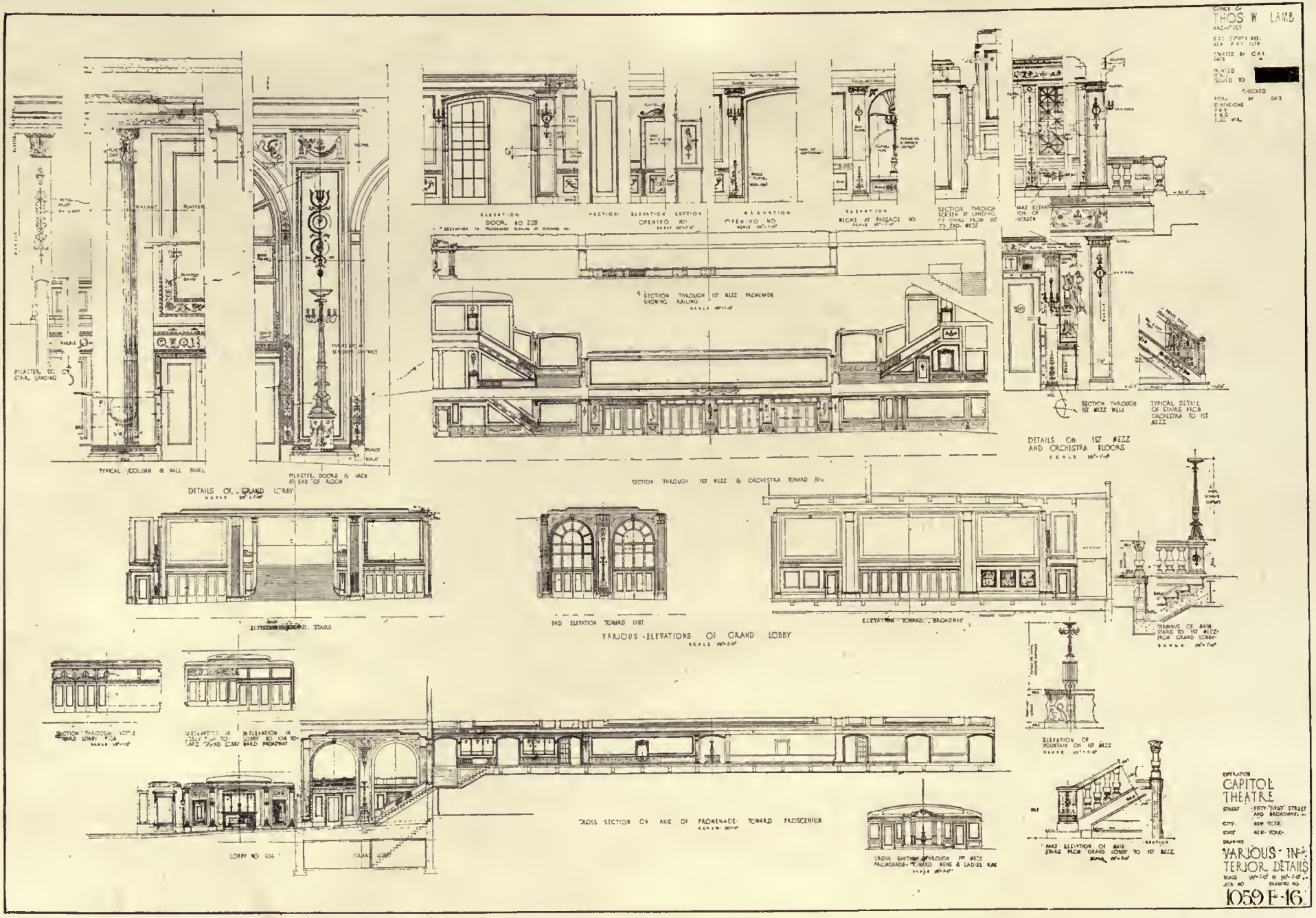


DETAILS OF SOFFIT, CAPITOL THEATRE, BROADWAY AND 51st STREET, NEW YORK. Thomas W. Lamb, Architect.



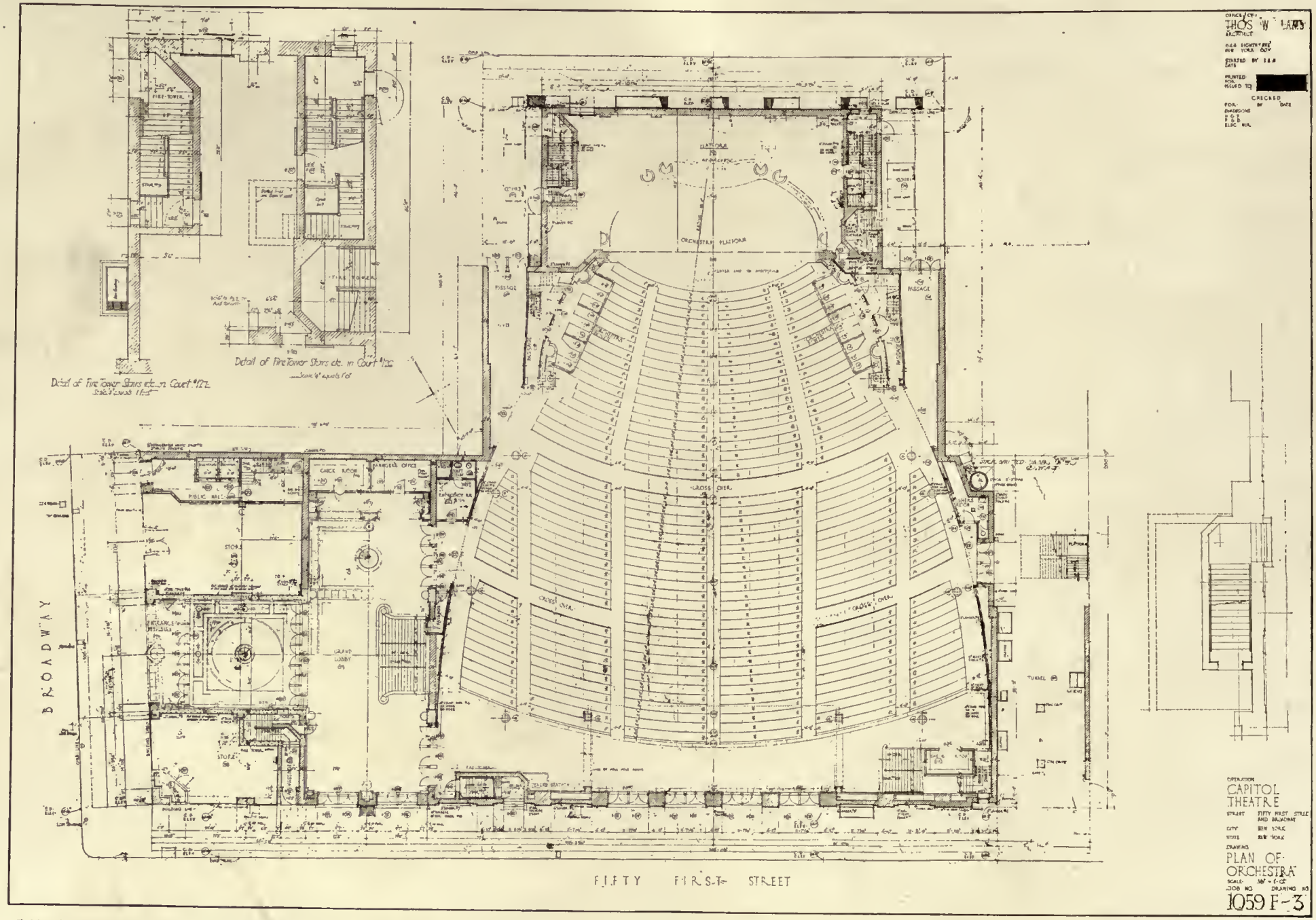
AUDITORIUM CEILING PLAN, CAPITOL THEATRE, BROADWAY AND 51st STREET, NEW YORK.

Thomas W. Lamb, Architect.


OFFICE OF
THOS W LAMB
ARCHITECT
CAPITOL THEATRE
STREET FIFTY-FIRST STREET AND BROADWAY
CITY NEW YORK
STATE NEW YORK
DRAWING
VARIOUS INTERIOR DETAILS
SCALE
JOB NO
DRAWING NO
1059 F-16
TYPICAL COLUMN & WALL PANEL
PILASTER, DOOR & ARCH AT END OF ROOM
DETAILS OF GRAND LOBBY
SECTION THROUGH 1ST MEZZ & ORCHESTRA TOWARD PROSC.
SECTION THROUGH 1ST MEZZ PROMENADE
DETAILS ON 1ST MEZZ AND ORCHESTRA FLOORS
SECTION THROUGH 1ST MEZZ WELL
TYPICAL DETAIL OF STAIRS FROM ORCHESTRA TO 1ST MEZZ
VARIOUS ELEVATIONS OF GRAND LOBBY
ELEVATION TOWARD BROADWAY
TERMINUS OF MAIN STAIRS TO 1ST MEZZ FROM GRAND LOBBY
ELEVATION OF FOUNTAIN ON 1ST MEZZ
CROSS SECTION ON AXIS OF PROMENADE TOWARD PROSCENIUM
CROSS SECTION THROUGH 1ST MEZZ PROMENADE TOWARD MENS & LADIES RMS
MAIN ELEVATION OF MAIN STAIRS FROM GRAND LOBBY TO 1ST MEZZ
LOBBY TO 104
GRAND LOBBY

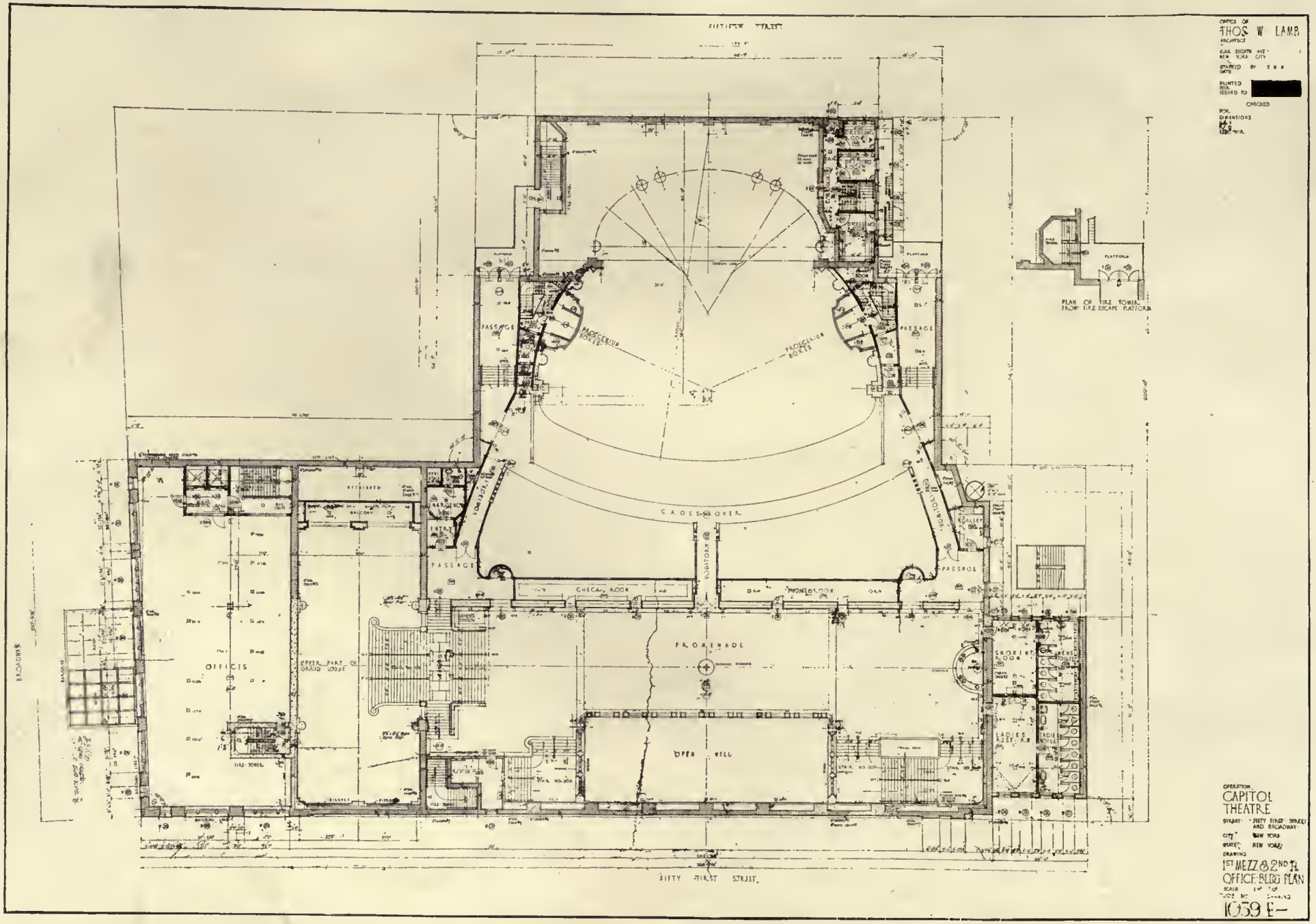
INTERIOR DETAILS, CAPITOL THEATRE, BROADWAY AND 51st STREET, NEW YORK.

Thomas W. Lamb, Architect.

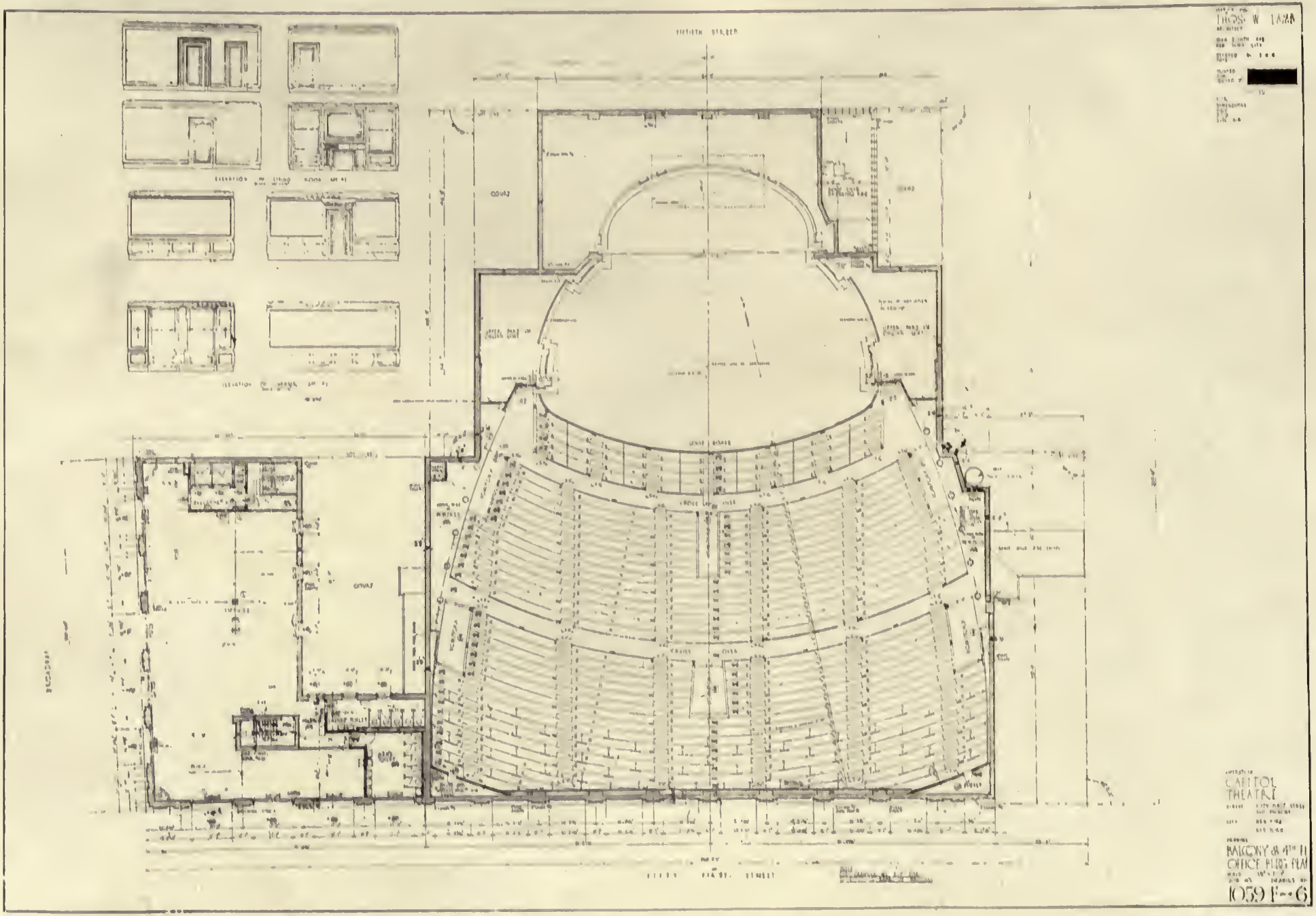


PLAN OF ORCHESTRA, CAPITOL THEATRE, BROADWAY AND 51st STREET, NEW YORK.

Thomas W. Lamb, Architect.



PLAN, FIRST MEZZANINE AND SECOND OFFICE FLOOR, CAPITOL THEATRE, BROADWAY AND 51st STREET, NEW YORK. Thomas W. Lamb, Architect.



PLAN, BALCONY AND FOURTH OFFICE FLOOR, CAPITOL THEATRE, BROADWAY AND 51st STREET, NEW YORK.

Thomas W. Lamb, Architect.

NEW TOWN HALL, MILFORD, CONN.

Tracy & Swartwout, Architects.

REAR, NEW TOWN HALL, MILFORD, CONN.

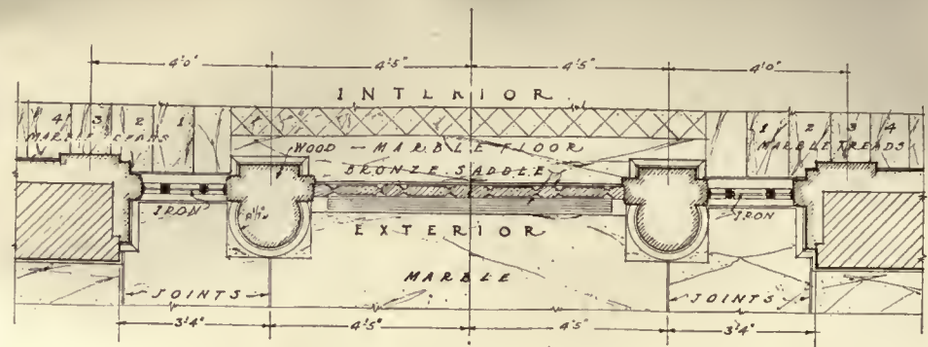
Tracy & Swartwout, Architects.

ENTRANCE-HALL AND STAIRCASE, NEW TOWN HALL, MILFORD, CONN.

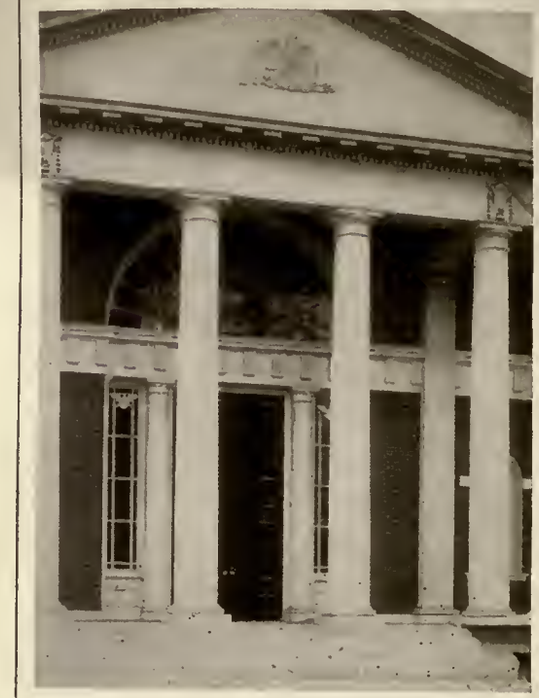
Tracy & Swartwout, Architects.

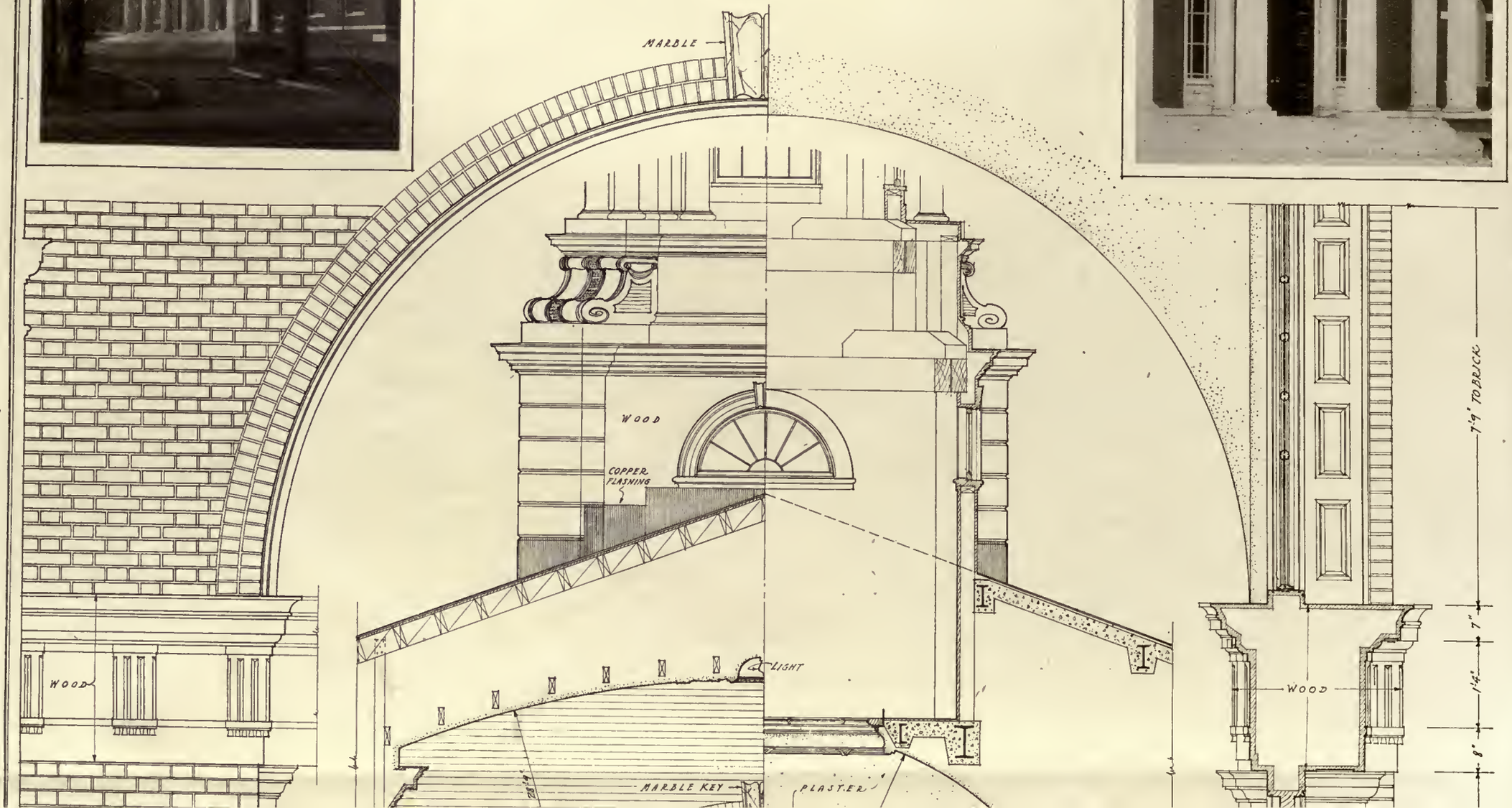
COURT–ROOM.

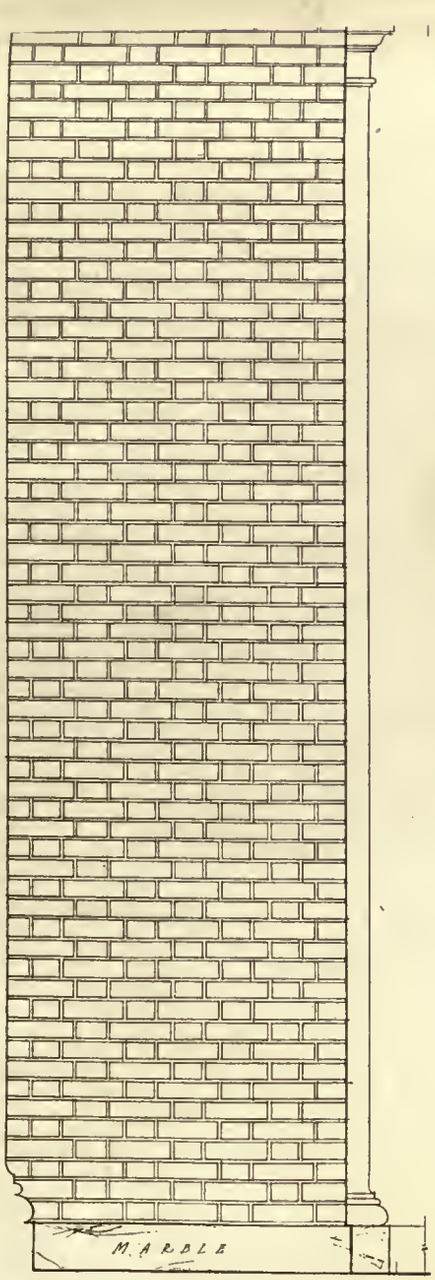
AUDITORIUM. NEW TOWN HALL, MILFORD, CONN. Tracy & Swartwout, Architects.


4'0"
4'5"
4'5"
4'0"
INTERIOR
WOOD — MARBLE FLOOR
BRONZE SADDLE
MARBLE TREADS
IRON
IRON
EXTERIOR
MARBLE
JOINTS
JOINTS
3'4"
4'5"
4'5"
3'4"

PLAN ¼" = 1'0"



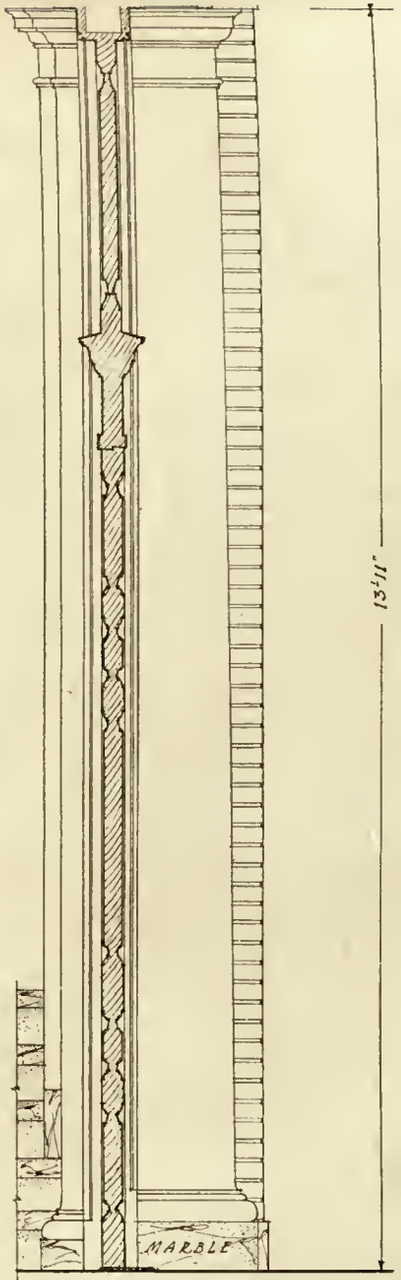

MARBLE
WOOD
COPPER FLASHING
WOOD
LIGHT
MARBLE KEY
PLASTER
WOOD
7'9" TO BRICK
7"
14"
8"



ELEVATION ½" SCALE

EXTERIOR ¼" = 1'-0" INTERIOR

ELEVATION OF MAIN ENTRANCE DOOR



SECTION ½" SCALE

"ARCHITECTURE" SERIES

~ OF ~

MEASURED DETAILS

MILFORD TOWN HALL

MILFORD CONN.

TRACY AND S. WARTWOUT ARCHTS

FEBRUARY · 1919 ·

DRAWN BY EDWARD BAUER

The Park Avenue Viaduct, New York City

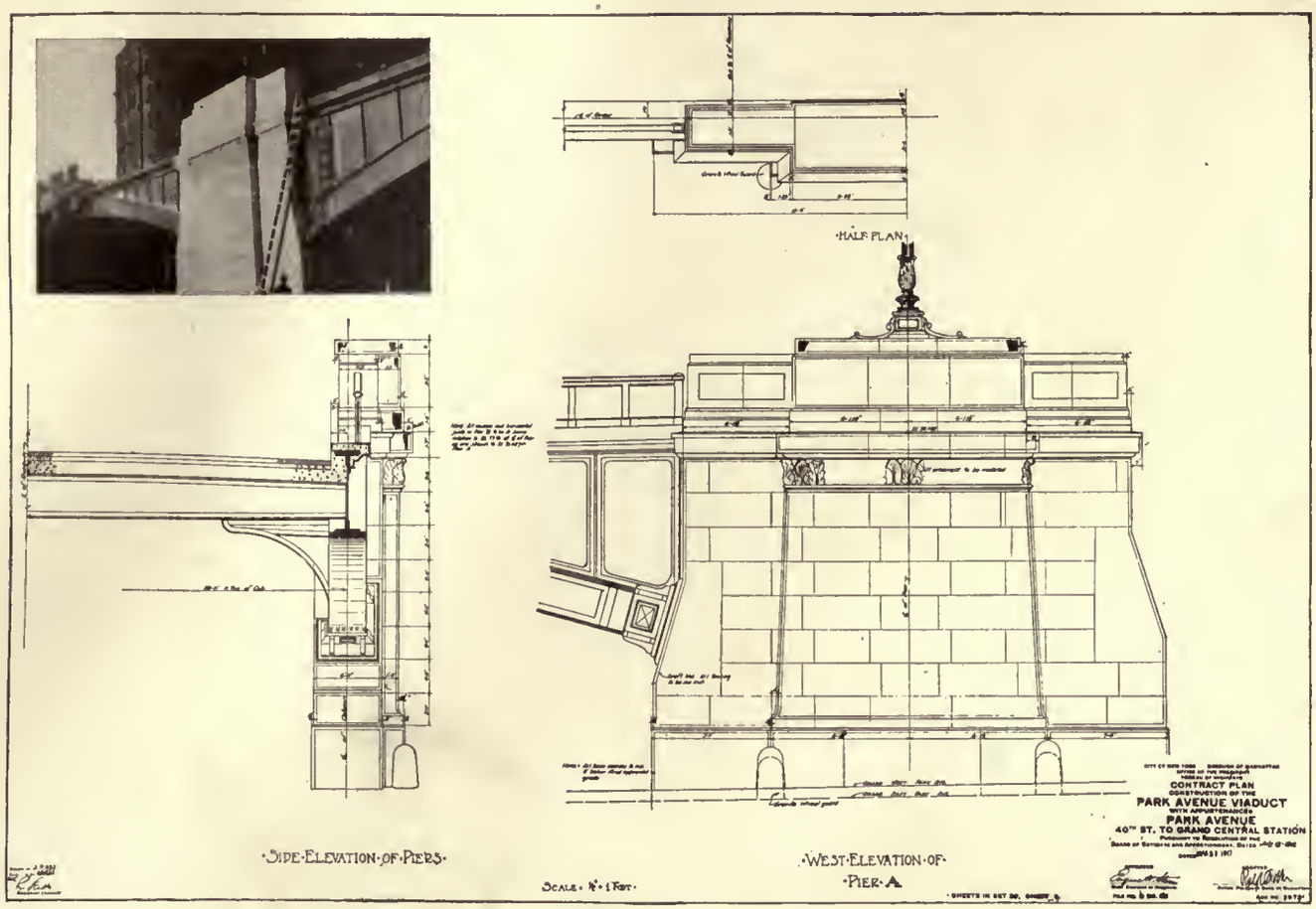
STREET traffic in every direction from Grand Central Station, New York, will be greatly relieved by the new Park Avenue viaduct, now nearing completion. The only other north and south bound avenue for traffic within the Borough of Manhattan that has not either a surface-car, elevated line, or both, is Fifth Avenue. The traffic conditions on Fifth Avenue have become so greatly congested that the improvement of Park Avenue at 34th Street, in conjunction with the construction of the Park Avenue viaduct opening up another free avenue of traffic, was vital and is even considered by the proper authorities as of enough importance to have been a military necessity, had the war continued.

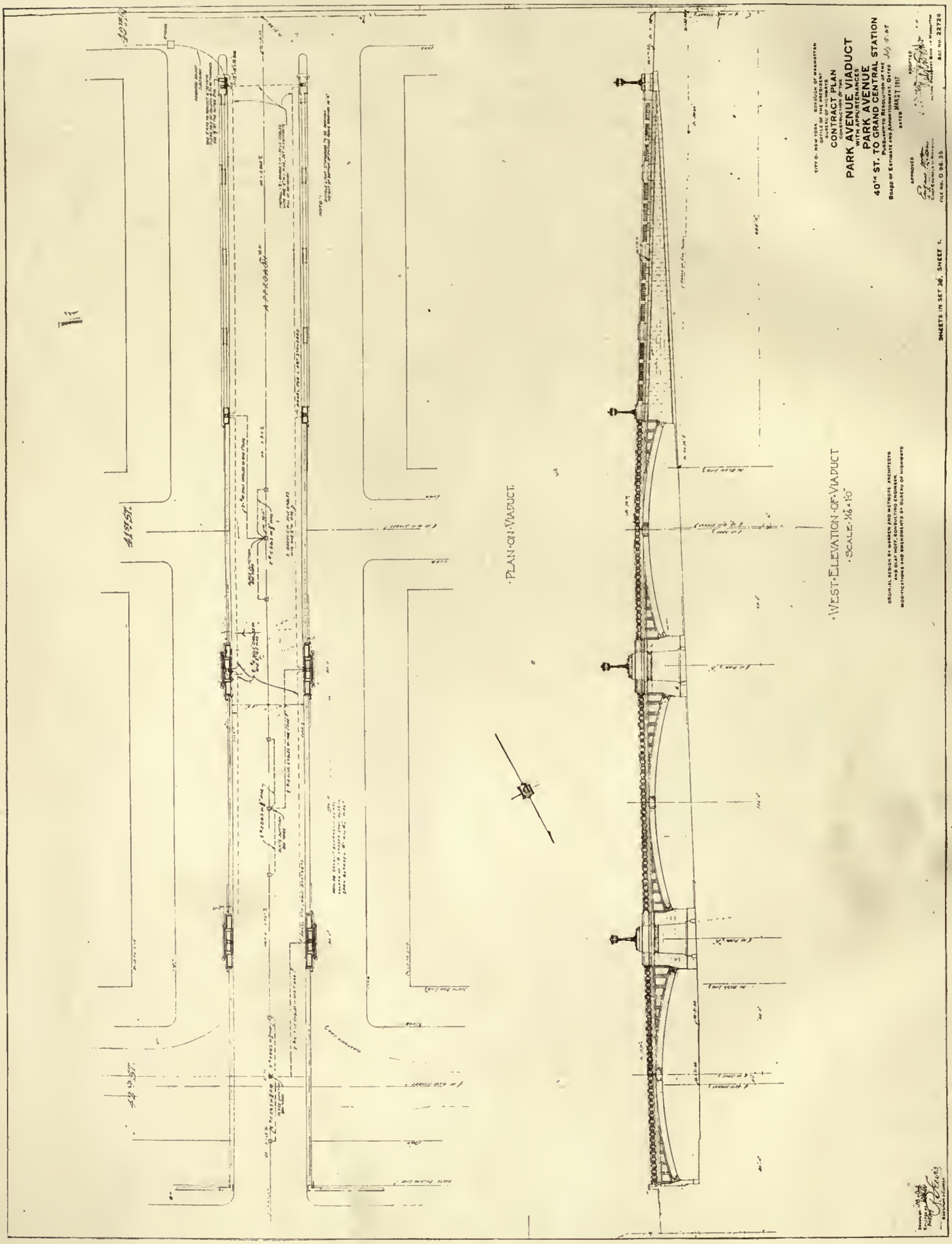
This viaduct begins at 40th Street and is carried over Park Avenue, overgrade across 42d Street, and leads to an elevated roadway around the west side of the station, connecting with upper Park Avenue at 45th Street.

In designing this structure, conditions led to the unusual expedient of using steel cantilever girders shaped to appear as arches. Æsthetic considerations called for arches, but as the site is over a network of rapid transit subway structures it was not practicable to provide abutments for true arches. The arched cantilever construction offered a convenient solution.

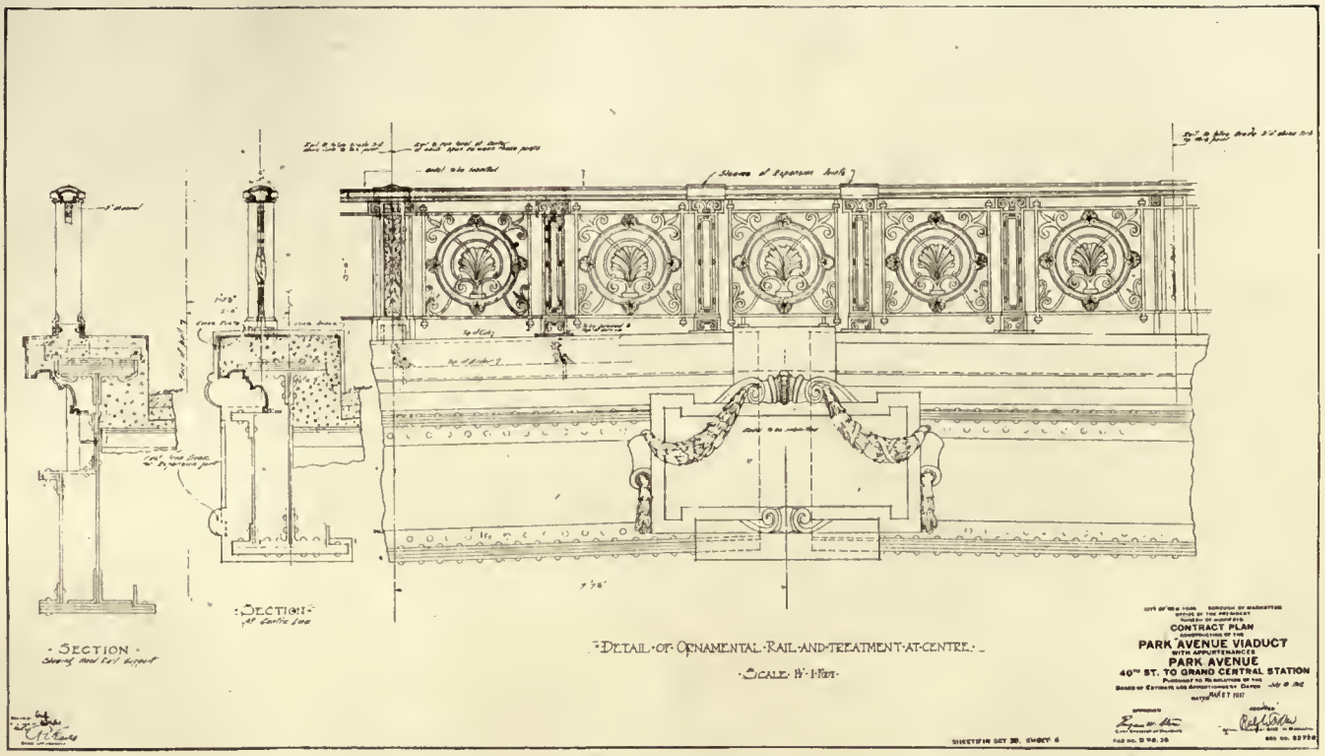
The idea of designing the steel spans as cantilever beams, but yet making them appear as arches, grew out of the physical conditions of the site. A true arch design would have required space for its abutments in the street and in the Grand Central Terminal Building that could not be spared, and would have involved practically impossible foundation conditions. The girders forming the northerly half of the north span are supported on columns located at the northerly building line of 42d Street, extending back over these columns to frame into the existing steel work in the Terminal Building. The other girders will be supported individually on two steel columns and that part of the girder between them. The girders over the piers

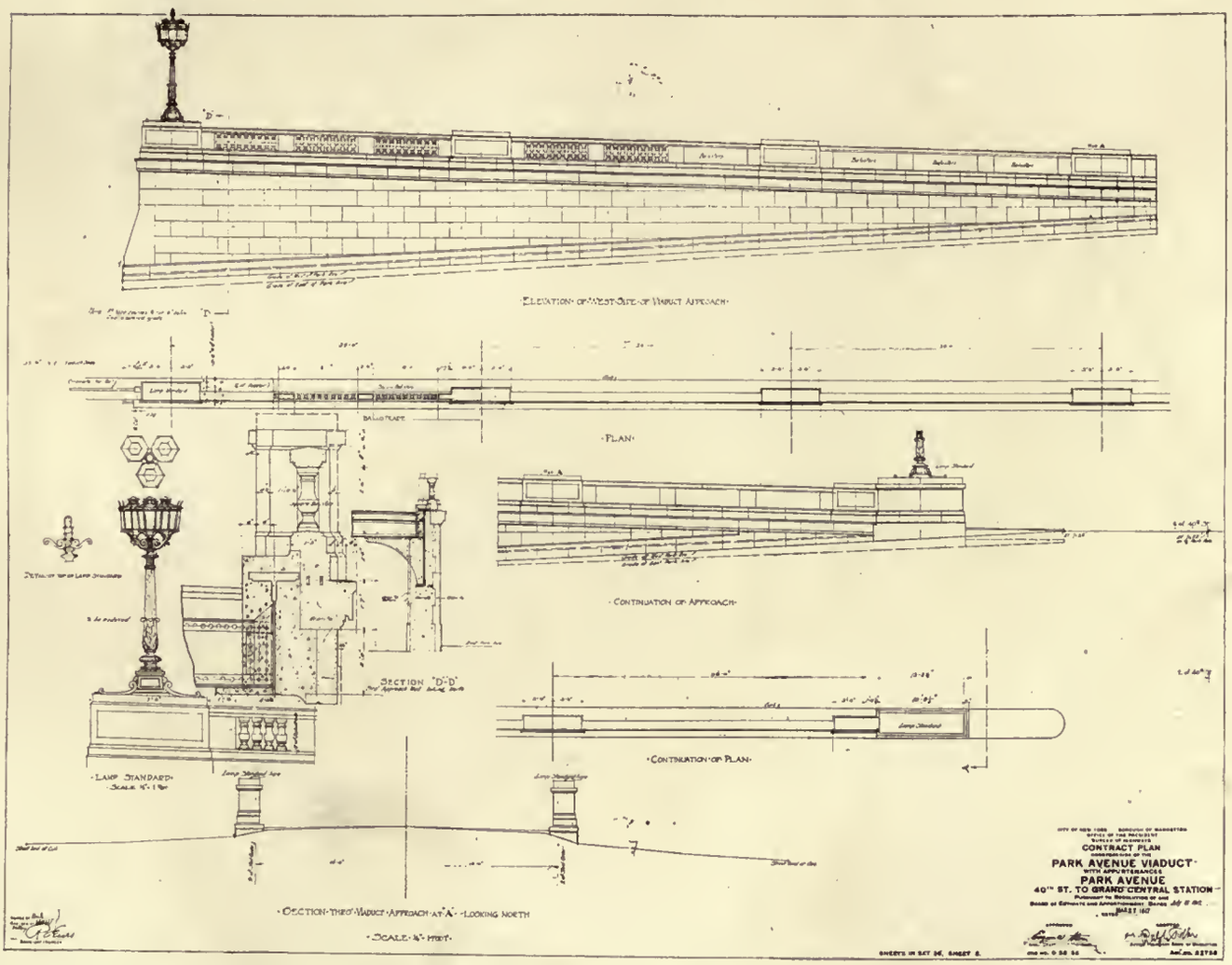
(*Continued on page 44*)





PARK AVENUE VIADUCT, PERSHING SQUARE, NEW YORK.





DETAILS OF PARK AVENUE VIADUCT, PERSHING SQUARE, NEW YORK.

are the largest and heaviest, being 136 feet long by about 12 feet deep at the supports, and weighing 73 tons each. Difficulties as to clearances on the Pennsylvania Railroad made it necessary to route the cars via Morristown, then back to Frankfort Junction across the Delaware, and back to Trenton via the Belleordre branch. The girders were unloaded from the cars at Greenville onto floats and towed to 19th Street and East River, from which point they were hauled on trucks, pulled by fifty-two horses to the site of the viaduct. All of the girders have been fabricated and shipped as units, and erected without field splicing. The meeting ends at the crown of each "arch" will be joined by a horizontal pin through slotted holes, allowing a maximum expansion of 2 inches. The structure is an interesting engineering problem.

Architecturally the viaduct was designed to harmonize with the Grand Central Terminal, and it is gratifying to note that the original design by Warren & Wetmore, Architects, and Olaf Hoff, Consulting Engineer, though modified by the Chief Engineer of Highways, Department of Public Works, has produced a beautiful and satisfying work of truly monumental character.

The Great Work Done by the Construction Division of the Army

THE Construction Division of the U. S. Army is one of the most effective construction organizations that has ever existed. It is believed this statement will go unchallenged, so it will not be necessary to prove it. This organization is composed almost entirely of men from civil life. They are the men who have tunnelled our mountains, bridged our streams, built our sky-scrapers, constructed and maintained our shops and industrial enterprises and public utilities and railroads. In two years they will have performed three times the work required by the Panama Canal, that took ten years to complete. They have done this under the most trying conditions of labor, material, and transportation, and at a reasonable cost.

This organization is still intact. It still possesses $3,000,000 worth of mechanical construction equipment, with the operation of which it has had experience. Its labor is nearly finished. Within a few months all of this will be disbanded. To allow it to disintegrate while great construction demand exists would be an economic crime. If this organization with its equipment could take hold of the rebuilding of France as it took hold of the building of our cantonments and terminals, etc., it should be of the greatest possible assistance to French constructors, and would be appreciated.

The majority of these men would be willing to go to France if they could continue their present organization and be permitted to work by the methods that have proved so successful. Co-operation of French engineers will be necessary. At the invitation of the French engineering societies and of the French Government, a representative body of American engineers is now in Paris conferring with them regarding maintenance and construction of all kinds of reconstruction work for the devastated areas. When that delegation returns to this country and advises as to the exact condition of affairs, we should be ready to take instant action along these lines.

Book Reviews

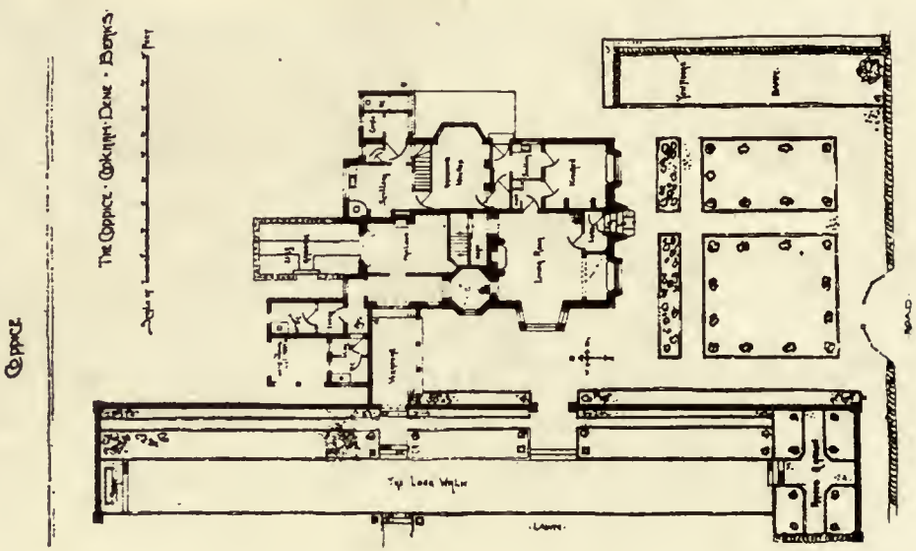
ARCHITECTURE AND DEMOCRACY. By Claude Bragdon. Alfred A. Knopf. 12mo. $2.00 net.

Whether you quite follow all of Mr. Bragdon's theories and comments or not, you will at least find him a stimulating and intriguing writer, with an individual point of view based on a foundation of sound architectural training. Like so many others, he has been observant of recent tendencies.

"With the modern tendency toward specialization, the natural outgrowth of necessity, there is no inherent reason why the bones of building should not be devised by one man and its fleshly clothing by another, so long as they understand one another and are in ideal agreement, but there is in general all too little understanding and a confusion of ideas and aims. To the average structural engineer the architectural designer is a mere milliner in stone, informed in those prevailing architectural fashions of which he himself knows little and cares less. Preoccupied as he is with the building's strength, safety, economy, solving new and staggeringly difficult problems with address and daring, he has scant sympathy with such inconsequent matters as the stylistic purity of a façade or the profile of a moulding. To the designer, on the other hand, the engineer appears in the light of a subordinate to be used for the promotion of his own ends, or an evil to be endured as an interference with those ends."

WE are pleased to acknowledge the receipt of a copy of the book giving the interesting history of the growth and development of the *Detroit News*. The life story of a newspaper that has achieved the success of the *News* makes a mighty interesting record.

The *News* has one of the most complete and up-to-date buildings in the country. Alfred Kahn was the architect, and he has created a building of marked individuality and appropriateness for its purposes.



T. H. Lyon, Architect.

"THE COPPICE," Cookham Dene, Berkshire, England, stands on the top of a hill overlooking the river Thames. The plan followed is one which has found favor in England of late years. In houses of the smaller class the tendency has been to substitute for a number of rooms one large living-room which serves also as an entrance-hall, with perhaps also a small private parlor. A sense of spaciousness was obtained in the house illustrated by placing the staircase behind the fireplace instead of making it a feature in the living-room. An attractive corridor connects the living-room with a little parlor, from which the veranda is approached through double French casement doors. This veranda opens into the two gardens, which are separated by a flint and brick wall built in true Berkshire style. A caretaker's cottage is included under the main roof, with a connection to the house through the serving offices. The cost was about ten thousand dollars.

The Stamford Children's Home

By Harry Allan Jacobs

THE artist, whether he be architect, sculptor, painter, or musician, generally gets his inspiration from some idea which forms the nucleus for his completed picture. When asked to design the new Stamford Children's Home, there happened an extremely pleasant episode in my life which helped me to create the new building.

Every one has read Jean Webster's charming little book "Daddy Long Legs," and nearly everybody has seen the play. One can never forget the squalid orphan asylum, little children dressed alike in gingham, with the unhappy look, living in surroundings without love, and scolded from morning until night by a soulless matron.

Vista from porch.

It was just about this time that I completed an orphan asylum at Pleasantville on the cottage plan, which we hoped had done away with the abuses and shortcomings of the orphan asylum as shown in the play. I wrote to Miss Webster and asked her if she would like to see the new orphan asylum. She was perfectly delighted, and I look back on one of the pleasantest days of my life when I piloted her about the new buildings. Her gratitude was touching for the change that the president of this institution had brought about over the squalid and unhappy conditions that had prevailed in the past. But this was not exactly Miss Webster's dream or conception of what she would have done had she lived.

The buildings at Pleasantville are on the plan of the greatest good for the greatest number. It is a large institution, accommodating five hundred children on a cottage plan, with thirty children in each cottage. Of course this was the only thing to do with many hundred children, but Miss Webster's idea was for a building of a more intimate nature, a home for a few children, a home in every respect, with the lovely living-room and open fireplace, where the children gather around at night, listening to the stories of a motherly soul who took care of them; and I hope I have been able to put the ideas of Miss Webster, which no doubt she would have built had she lived, into this new building.

There were to be no large dormitories with fifteen and twenty children in each dormitory. No, she would have had none of that; no more than four or five children in each room. Then there would be fine open sleeping-porches for the poor children who were anæmic and needed plenty of fresh air. In the dining-room there were not to be long tables with oil-cloth and all the children at one table; there again her idea was to have little tables of four or five to a table, making cosey little groups, and the rooms would not be plastered with chromos and ugly pictures. Her idea was to have little net curtains and in the living-room book-shelves with cheery books. The walls were to be rough sand-finish plaster of a nice bright cream tone. There would be showers and nice baths with modern plumbing and sanitary steel lockers. The rooms would be large and airy, with plenty of windows, letting in sunlight and happiness. The kitchen would be spotlessly clean, and the boys would have their own dining-room and the girls theirs, with a separate pantry for each connecting from the kitchen; and if a kiddie fell sick there would be a little infirmary where he would be nursed back to health, with every care of competent physicians and nurses; a great big playroom for rainy days where they could romp to their hearts' desire, and, of course, comfortable quarters for the staff.

There is no style of architecture which lends itself so admirably to the picturesque, domestic qualities as the domestic English Gothic, so we have made a low, rambling building of two stories instead of the high, boxy building.

Miss Webster had in mind fine evergreen planting to make the place cheerful in winter, and for the summer picturesque gardens filled with herbaceous planting, hollyhocks, sweet-williams, foxgloves, asters, etc., all giving a riot of color, imparting happiness and cheerfulness; then,

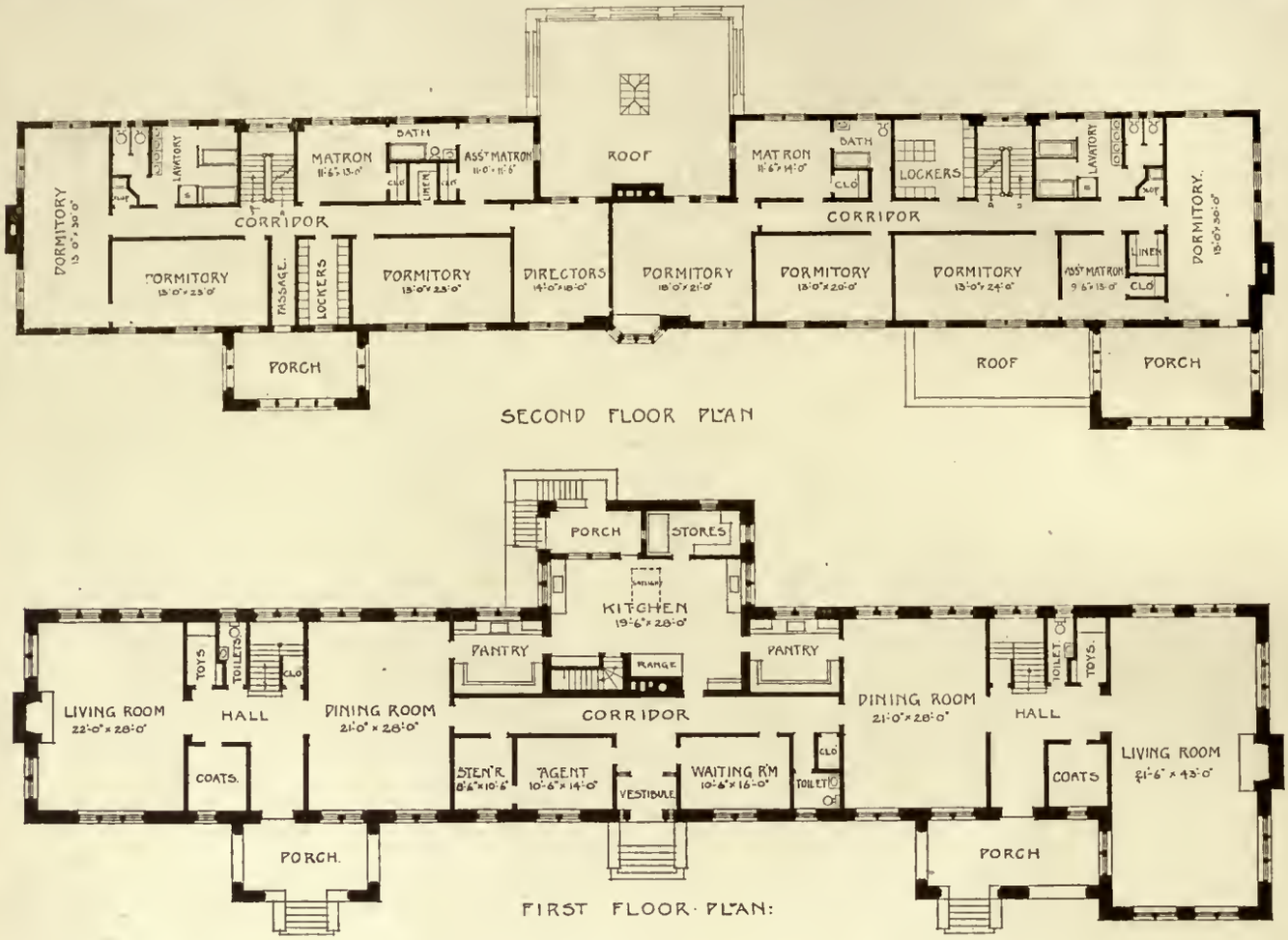
FRONT, STAMFORD CHILDREN'S HOME, STAMFORD, CONN.

Harry Allan Jacobs, Architect.

somewhere, there would be a little trickling fountain to make the place cool in hot weather.

All these charming ideas Jean Webster had in mind, and if I have been able to install them in the new building it is because I felt the soul of Jean Webster as having been with me in designing it.

I hope that I have not omitted anything to make the children comfortable and happy. I have endeavored, in every way, to keep the spirit of the real home, and trust that this feeling will permeate the soul of the little children and make them happy and contented, and fit them morally, physically, and mentally to battle with what is to come.



We Must Protect Our Forests

GREATER conservation of wood and wood products through protection for the raw material in the forests of the United States is urged by Secretary Houston's assistants in the Department of Agriculture. The secretary's annual report also advocates provisions for pushing more rapidly the improvement work in the forests, for a greater number of forest guards, and for earlier organization each fire season of the protective system.

It is declared that protection of the forests during the present year proved an exceptionally difficult task. An annual strain was imposed on an organization somewhat depleted in numbers and much weakened by the loss of many of its most experienced men. Added to this was the difficulty of securing good men for temporary appointment as guards during the fire season, and parties of men for fighting large fires. An unusually early and severe dry season caused the outbreak of serious fires before the summer protective organization was fully ready.

The department declares that some embarrassment in meeting the situation was caused by the failure of the annual appropriation act to pass Congress until after the fire season was virtually over. Relief was furnished by the President, who placed $1,000,000 at the secretary's disposal as a loan from the President's emergency fund. It may be necessary, the secretary says, to seek from Congress again a deficiency appropriation of $750,000.

New York City Real Estate Values

FOR the purposes of comparison with other cities, or to approximate debt limit or bankruptcy possibilities and other more or less idle calculations, New York realty is generally taken at the assessable value base. The Tax Department figures the value of taxable realty at $8,339,638,851.

That represents only a partial valuation, however, for there is much property which does not appear in tax lists. For instance, the city itself in the way of schools, police-stations, parks, bridges, fire-houses, and other municipal necessities, not to mention land held idle taken for school purposes and other future needs, which is estimated as having a value of $1,707,664,450.

The United States, in forts, navy-yards, custom-houses, assay offices, hospitals, and other possessions, totalled this year a value of $69,625,500. The State has city property worth $7,349,035, and churches and religious organizations occupy tax-free properties to a value of $415,447,817.

Should all property in New York City be taxable, the levy would be based on $10,539,725,653.

The New York Evening Post.

REAR, THE STAMFORD CHILDREN'S HOME, STAMFORD, CONN.

Harry Allan Jacobs, Architect.

For a Better Co-operation Between Architects, Engineers, the National Government, and Other Organizations

From an Address by D. Knickerbacker Boyd

At the last Convention of the American Institute of Architects

ATTENTION has been recently called to some of the activities of the American Society for Testing Materials, the National Fire Protection Association, the Underwriters' Laboratories, the United States Bureau of Standards, and of some of the departments of the United States Government.

Various other departments of the government, as well as these and other organizations throughout the country, are performing services at all times and issuing publications that are of the greatest interest and usefulness to the architectural profession and other interested citizens—and yet how few of us, comparatively speaking, realize what is being done in this direction and how we are being benefited. The point is, that being the case, should it not create a reciprocal obligation on our part to co-operate with these agencies, not alone by availing ourselves of the information which can be obtained through publications issued by them, but by participating as fully as possible in their activities and contributing to the results which made these publications possible? Should we not, as many of us as can, be members of the National Fire Protection Association, the American Society for Testing Materials, and some of the other national organizations which are working for the good of us all in the various problems connected with the sheltering of humanity?

How few of us are aware that the Department of Agriculture will provide information and furnish publications to any architect or any citizen of the United States who asks for either. Many of the excellent publications are absolutely free and others may be had at merely nominal prices. It seems to me we should acquaint ourselves with the service which this department renders and the publications which it issues, and that in the case of the latter we should use as many of them as we can, should review them, and, wherever possible, offer suggestions for their amplification, improvement, or greater distribution and utilization.

The same department has prepared an elaborate and most interesting model of a farmstead, showing all the buildings of such a group as well as the layout of the grounds. Why should we not get in touch with the Department of Agriculture and offer our services in further developments of this idea, and see that such models are given the widest circulation and recognition possible?

The same thing applies to the Bureau of Education in the Department of the Interior. That bureau not only issues comprehensive publications relating to schoolhouses and all educational matters but has prepared drawings for schools for the smaller communities of the country. I wonder how many of the architects know that such drawings have been prepared, that they are available to, and are secured and used by, school boards and communities? Why should we not co-operate with the government in the issuance of such drawings, if they need improvement, and, if not, at least let the department know that we are with it in this movement? It also has prepared a model for a schoolhouse for a small community, and that model is being asked for by school boards in various parts of the country, and has doubtless proved very helpful to them in arriving at conclusions.

The United States Department of Labor and the Bureau of Mines have both made investigations into the subject of the housing of employees for many kinds of industry, and they have issued valuable publications relating to this subject, which includes a monthly bulletin of the Bureau of Labor Statistics. I do not know how many architects are aware of these facts or whether they have applied for any of those publications, but, if not, they should.

The Navy Department issues specifications for materials that are used in many features of building construction. These we should know of and benefit by the results of these investigations.

In these and many other ways we should recognize what is being done for us by the various departments of our own government and afford them the realization that, as citizens, we are utilizing the results of their endeavors and are willing also to assist them in every way we can.

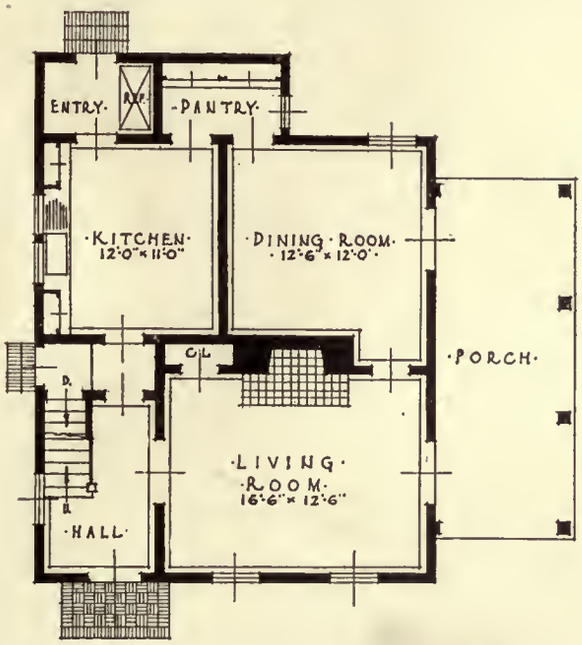
Among other things, we should, it seems to me, cooperate with the American Society of Civil Engineers and other great engineering societies far more than we have ever done. In recognition of the important developments in materials and appliances which they have brought about, we should voice our desire and willingness to take a more active part in such work.

We should also maintain a more cordial contact with and give encouragement and assistance to such organizations of producers and manufacturers as are constantly and conscientiously endeavoring to improve materials and processes and bring about a better understanding of their varied characteristics.

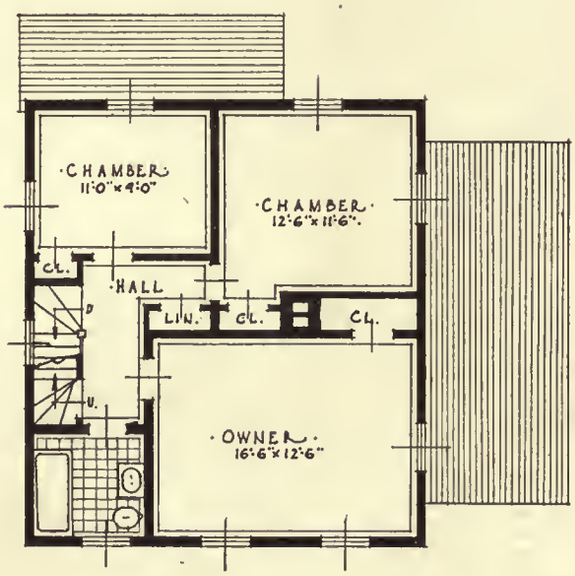
And, at the same time, I want particularly to mention the necessity for correcting the lack of co-operation on our part with the craftsmen, mechanics, and others employed upon buildings. In this connection the American Federation of Labor maintains a Building Trades Department, composed of nineteen organizations known as "Internationals," with local branches in different parts of the country covering the various industries that pertain to building construction. These concern themselves, among other things that we ought to know more about, with methods of safety in construction and the use of building materials.

Other organizations that we should consider are the Public Health Association, the American Hospital Association, the National Association of Real Estate Boards, the Illuminating Engineering Society, the National Safety Council, the American Museum of Safety, the Workmen's Compensation Service Bureau, with the valuable work and publications of all of which we would do well to familiarize ourselves.

The National Education Association is another one of the bodies which is working for the safety of occupants in buildings and is one which has a Committee on Standardization of Schoolhouse Construction and Planning.



·FIRST · FLOOR · PLAN·



·SECOND·FLOOR · PLAN·

HOUSE AND PLANS, EUGENE KRUSKAL, PELHAM MANOR, N. Y. Julius Gregory, Architect.

The Work of the United States Housing Corporation

Project No. 457—Hammond, Indiana

AT the southern end of Lake Michigan, within an hour's ride of Chicago, are several towns known as the Indiana steel towns, of which the most important are: Gary, Indiana Harbor, East Chicago, and Hammond. South Chicago, across the line in Illinois, and north of Hammond, can be classed with this group, which also includes a number of smaller towns or communities.

The entire section has had a remarkable growth, which undoubtedly will continue because of the elements inherent in the location that appeal to the manufacturer, such as exceptional water and rail transportation for raw material and finished product, broad, flat acres on which to expand, and close proximity to a large population.

Housing for these communities has been a live question from the moment the United States Steel Corporation and others located their immense plants in this vicinity a few years ago.

Hammond is one of the towns which has shared in the growth of the section, and is the home of several manufacturing concerns employing large numbers of workmen. One of these plants, the Standard Steel Car Company, was engaged in urgent government work, and was seriously handicapped in production by lack of facilities to care properly for its employees. As no other solution of its housing problem was found to be adequate, the housing development described below was inaugurated. The lot plan for this project was made by Mann & McNeille, architects, for the Ordnance Department of the army, and the installation of the street paving and utilities was undertaken and completed by the Standard Steel Car Company, prior to the taking over of the project by the U. S. Housing Corporation.

The large hotel in the centre of the group which is used to house employees of the company, was erected and completed by the Standard Steel Car Company before the erection of the houses was commenced.

The designing of the houses was assigned to J. C. Llewellyn, architect, of Chicago. The need for them was urgent and the purpose has been to design them so they would build easily. Hence compact plans, simple elevations and the use of materials which could easily be obtained in the neighborhood were favored. As contracts for the houses were let at a time of the year which might carry construction into late fall or early winter, the use of materials that would require time to dry out, or that would need fair weather for finishing—such as concrete walls and construction or tile, and the general use of stucco for outside finish—was avoided, and as far as possible houses of frame construction, interspersed with houses of brick, or brick and a limited amount of stucco, were decided upon. As matters have worked out the exteriors of the houses are practically complete, and the small amount of finishing that remains to be done at present is not dependent on weather conditions.

The development consists of 163 single family houses and 11 boarding-houses, each of the latter capable of caring for the equivalent of at least one additional family, thus making a total of 185 families accommodated. The houses are distributed as follows:

NO. FAMILIES		
7	4-family four-room houses, brick construction—Type C	28
6	4-family four-room houses, frame construction—Type C[1]	24
17	detached four-room bungalows, frame construction—Type I	17
5	2-family four-room semidetached bungalows, frame construction—Type J	10
42	detached six-room houses, frame construction—Types E, E[1], A	42
11	semidetached 2-family houses, brick construction—Type B	22
6	detached six-room houses brick and frame construction—Type D	6
14	detached seven-room houses, frame construction—Type F	14
4	boarding-houses, brick and stucco construction—Type G	
7	boarding-houses, frame construction—Type II	

All houses are complete, with full basement, furnace heat, hot and cold water to bathrooms, sinks and laundry trays, electric light and bells. Each family has a plot of ground 40x100 feet, except for the four-family houses occupying special corners, as shown, where the ground area to each house will be somewhat less.

In the four-family houses (Type C) the centre houses have direct service from the street to the rear by means of a covered passageway, and are independent of their next-door neighbors in all matters of kitchen service, removal of garbage, etc. There are no alleys, all service coming from the front.

From the standpoint of design the architect has considered the development as a whole and not as a group of unrelated houses, differing widely in type and design, and have endeavored to gain an attractive effect mainly by variation in mass—rather than by the variation of styles, materials and colors so often employed. The object has been to maintain simple, straightforward lines, unbroken roofs and cornice lines, thus eliminating elements in construction which are expensive and not always of value. In the plans of all two-story houses there is no diminution in floor area in the second-story due to gambrel roofs, and no multiplicity of down spouts because of broken cornices.

The variation in the design of the houses with the different materials employed has given a variety to the ensemble which has no element of monotony. All frame houses

(*Continued on page 54*)

TYPES C, E, C, A, E, E².

TYPES E, E, G.

TYPES D, I¹, J, I.

UNITED STATES HOUSING CORPORATION
INDUSTRIAL HOUSING PROJECT NO. 457
HAMMOND INDIANA
JOS C LLEWELLYN ARCHITECT CHICAGO ILLINOIS

PLOT, PROJECT 457, HAMMOND, IND., FOR U. S. HOUSING CORPORATION.

Plot Plan, Mann & McNeille, Architects.
Houses, J. C. Llewellyn, Architect.

are sided with wide, rough clapboards of white pine stained with a silver-gray stain. They are trimmed with cornices, sash and doors and frames and lattices of porches in white, and topped with roofs the color of sea-green slate. Brick houses are faced with dark-purple red brick, laid with rough joints, and trimmed with white cornices, sash, doors and frames, trellises, etc., and roofed in the same manner as the frame houses.

Throughout the designing of the houses in the group there has been no attempt toward striking effects, but rather the aim has been to build comfortable houses for a price as low as possible, to offset the unusual prices of labor and material due to war conditions, and to build a community of houses each one of which bears the community stamp yet with enough variety to give each house a certain degree of individuality.

After this project has become a live addition to the community a survey of conditions here and in all other cities where housing for war needs has been built will prove very interesting in a sociological way to the general public as well as to housing specialists. It is well to consider the benefits that will accrue locally from these new cities and communities. Improved conditions are already apparent, and new ideas of civic pride and organization are bound to spread beyond the confines of these war-emergency towns. The large scale of the projects as compared to previous private speculative developments, combined with an appeal to patriotism, has afforded the opportunity of engaging high-grade specialists, working co-operatively to an extent that professional jealousy and the lack of an urgent crisis had largely prevented before the war, with the result that better homes have been provided than had ever been attained in pre-war construction of this type. And this has been done economically and upon a sound and practical basis, notwithstanding the ever-increasing cost of building materials and wages.

This war-time emergency construction is bringing to the attention of manufacturers and municipalities the fact that a sufficiency of good housing attracts the worker and consequently draws new industries to the locality. It also furnishes a valuable criterion for industrial housing of the future. The beneficial effect of good housing upon the health, happiness, and efficiency of the worker is being more generally realized. While much has been done in a short time, it may be said that we are just beginning to solve this important and difficult problem. The entire elimination of slum districts throughout the land should be the goal. Housing for war needs has shown the way as no private enterprise could have shown it. It is to be hoped that we do not drop back to our pre-war somnolence, but rather that we benefit by the providential crisis that has awakened us.

New Activities of the Indiana Limestone Quarrymen's Association

THE Indiana Limestone Quarrymen's Association has arranged to place three representatives in the field whose activities will be confined to the promotion of *Indiana Limestone* generally without regard to the interests of any single producer.

Mr. George B. McGrath, 1531 Park Road, Washington, D. C., will cover the eastern territory, that is, the New England States, New York State, Pennsylvania, Virginia, the Carolinas, and Georgia.

Mr. C. R. Yanson, of Bedford, Indiana, will cover the Middle States, embracing lower Wisconsin, the Mississippi Valley, and east to Mr. McGrath's territory.

Mr. J. R. Sargent, 225 Clay Street, Topeka, Kansas, will cover the territory west of Mr. Yanson's, to and including the eastern slope of the Rocky Mountains.

The purpose, simply stated, is to stimulate interest in *Indiana Limestone*.

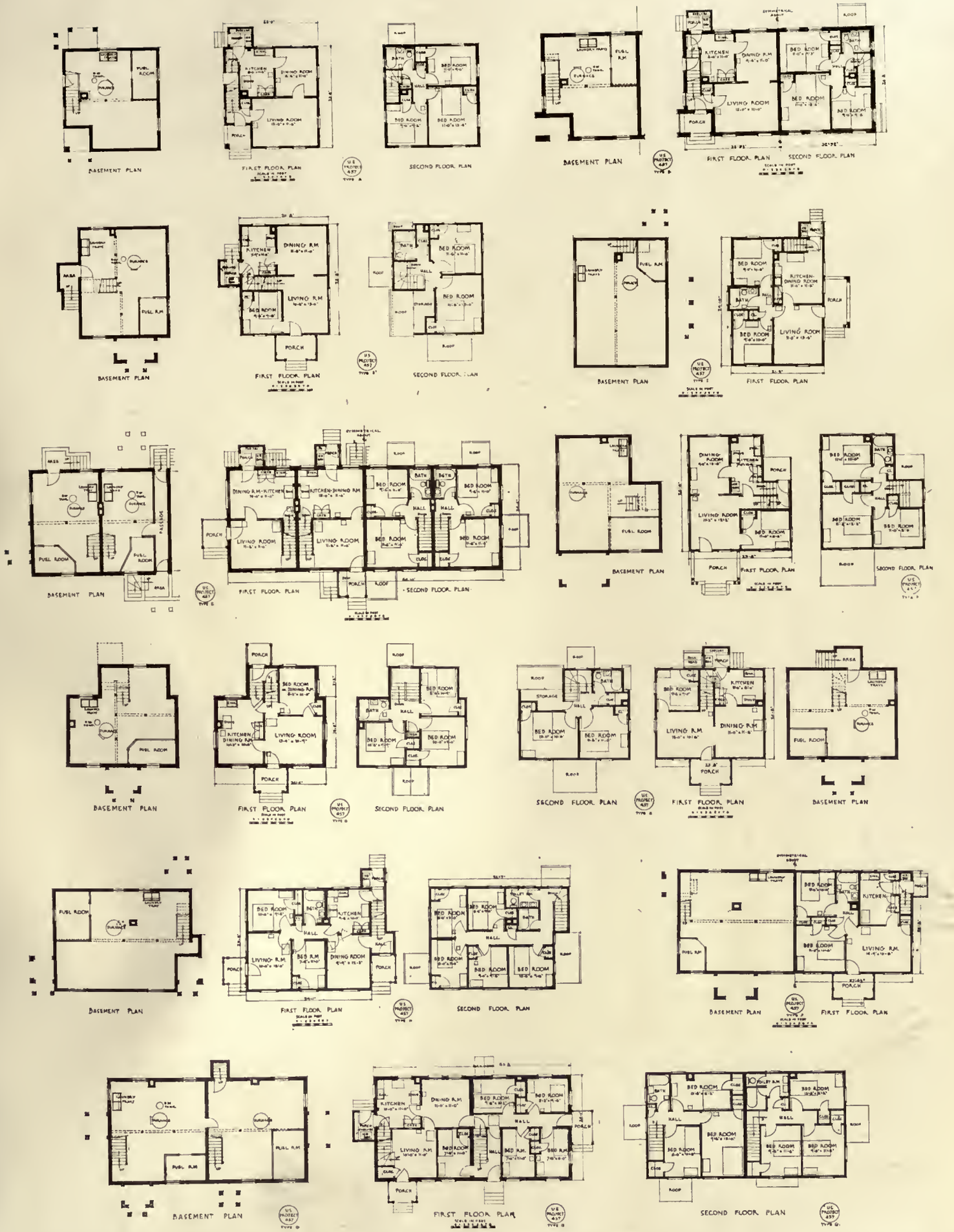
This will be done along legitimate lines and with full recognition of all conditions which make the architectural profession the great controlling factor in the creation of buildings.

The architectural profession may, therefore, feel that this new service of the Indiana Limestone Quarrymen's Association is at its disposal and that it can call on this service at all times.

They are preparing matters in such a way that there will be available accurate technical data, much of which heretofore has been only half formulated, if at all. It is their purpose to distribute unbiassed and entirely dependable information pertaining to the use of *Indiana Limestone* structurally and ornamentally.

While prospects generally are not definite at the moment, they do not intend simply to wait for things to happen, but are going to help make them happen, and hope that their efforts will find the hearty co-operation of the architectural profession.

Quite a little figuring is going on but as yet it appears to be confined to small jobs. The volume of inquiries, however, is growing and early spring will see some business of consequence and summer quite a good deal. The *Indiana Limestone* district did a business of about 2,500,000 cubic feet in 1918 and expect, at least, to double that in 1919.



PLANS OF VARIOUS TYPES, PROJECT 457 FOR U. S. HOUSING CORPORATION, HAMMOND, IND.

J. C. Llewellyn, Architect.

Legal Decisions of Interest to the Architect

These decisions are edited by Mr. John Simpson

Evidence of Ability to Finish Work

In an action by a contractor for breach of a building contract the defendants undertook to show that the plaintiffs had wrongfully failed and refused to complete the building according to the terms of the contract, due to the fact that they were financially unable to furnish sufficient material of proper quality and a sufficient number of properly skilled workmen to carry on the work. This was denied by the plaintiffs. The North Carolina Supreme Court held that on this issue it was competent for the defendants to show that the plaintiffs had executed a note to another on which judgment had been obtained.—Wilkerson *vs.* Pass (N. Car.), 97 S. E. 466.

Rendition of Monthly Statements

In an action to foreclose four successive mechanics' liens for work and material furnished under the same contract for the alteration of a house it was alleged that the contract provided that the contractors should receive for the work and material furnished the actual net cost thereof, plus 10 per cent; payments to be made monthly, immediately upon the rendition of monthly statements by the plaintiffs to the owner. It is held that under such a contract the rendition of the statements by the builder to the owner would be a condition precedent to the builder's right to receive any payment from the owner; and in an action by the builder upon the contract it would be necessary for him to allege either that such statements had been rendered to the owner or that their rendition had been waived by him.—Smith *vs.* Walter, 172 N. Y. Supp. 97.

Three-Week Period Payments

A contractor sued an owner for breach of a building contract which provided that the latter would make payments of 75 per cent of the value of the labor performed and materials incorporated on the premises every three weeks. The defendant contended that the work done and materials furnished during each three weeks constituted, under the terms of the contract, a separate contract, and the settlements made at the end of the three-week periods became accounts stated. It was held that such a contract provision does not so operate, but is a means provided by the contracting parties for estimating the amounts of the progress payments.—Steere *vs.* Formilli (Cal.) 175, Pac. 806.

Materialman's Lien

Under the terms of a mechanic's lien statute (North Carolina Rev., 1905, § 2021) the contractor must notify the owner by a statement properly itemized, showing the amount owing to the materialman, and the owner must retain from the amount due the contractor the value of the materials furnished. A mere notice by the contractor to the architect to procure his amount per cent by making a satisfactory showing of the amount of material delivered, without also showing that same is due to the materialman and not intended as notice on behalf of the latter, is no compliance with the statute and creates no lien for the materials. Mere knowledge on the part of the owner that certain laborers are at work on the building or that certain persons or firms have supplied material, does not suffice.—Norfolk Bldg. Supplies Corp. *vs.* Elizabeth City Hospital Co. (N. Car.), 97 S. E. 146.

Deviation from Specifications—Expert Evidence

In an action for money paid on account of the purchase price of property with the buildings in course of erection thereon, which the plaintiff had refused to accept on the ground of deviation from the specifications required by the buildings laws of the city of Philadelphia, the sole question was whether the departure from the specifications was intentional or so material as to justify the plaintiff in refusing to complete the purchase. The testimony was conflicting, and the question was necessarily one for the jury to whom it was submitted with instructions that, if the variations were material, the plaintiff would be entitled to recover the money paid, but if the defects were merely minor matters, the contract provided a way in which they could be adjusted. The jury found for the defendants.

On appeal the plaintiff complained of the action of the trial judge in permitting expert witnesses for the defendants to state whether in their opinion there had been a substantial performance of the contract in compliance with the plans and specifications, the objection not being to the competency of the inquiry, but on the ground that the answers of the witnesses were not based upon a hypothetical statement of the facts. While the usual practice is to receive the testimony of an expert in the form of answers to hypothetical questions which he, for the purpose of his testimony, assumes to be true, an expert frequently has occasion to personally examine the subject-matter of the inquiry. Each expert offered by the defendants made a personal examination of the buildings, together with the plans and specifications, and the Pennsylvania Supreme Court held that an objection that they should not be permitted to testify as the result of such examination without the use of a hypothetical question could not be sustained. Judgment for the defendants was affirmed.—Loeb *vs.* Davidson (Pa.), 104 Atl. 681.

FOR SALE

A genuine Persian Rug 14 x 21 in first-class condition

Inquire or write

H. W. MEYER, 120 Franklin Street, N. Y.

Bear Mill Manufacturing Co.

PRIVATE TEACHING

IN ELEMENTARY AND ADVANCED DESIGN, RENDERING AND SKETCHING

Personal and by Mail

By Prof. D. VARON, D. P. L. G. F.

Author "INDICATION IN ARCHITECTURAL DESIGN"

Prospectus on demand 309 Broadway, Tel. Worth 2946

576

THE GARDEN FRONT, RESIDENCE, JULIAN ELTINGE, LOS ANGELES, CAL.

Pierpont Davis, Architect.

ARCHITECTURE

THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXIX MARCH, 1919 NO. 3

Southern California's New Architecture

By Elmer Grey

From porch, residence, J. L. Rice, Pasadena, California.

ANY one who would journey to southern California now after not having been there for a few years would, if of a discriminating turn of mind, be struck with the latest development of style in many of its buildings. Especially during the last three or four years, many, if not most, of the important buildings built there have been done in what, for want of a better term, is called "Spanish." A similar tendency was, of course, noticeable prior to that time which had its beginnings in the inspiration of the missions; but it received a fresh, a different, and a much more powerful impetus with the designing of the World's Fair buildings at San Diego in Spanish colonial. This present development of style is not mission, though somewhat akin to it in derivation; it is an adaptation of the Spanish colonial architecture of Mexico, and of original Spanish architecture, to the needs of that portion of the United States which has much the same traditions and climate as has a large part of Mexico. So wide-spread has been the demand for it recently among those who have built fine homes and other important structures in southern California that it bears promise of being one of the prevailing types of architecture of the Southwestern States, in the same way in which colonial and its variations are typical of the Atlantic States.

This is, of course, as it should be in more ways than one. When (before the war) we travelled in Europe, the one thing which lent interest to our wanderings and charm to any particular locality was the distinctive character which that locality had differentiating it from all others. In England it was among other things the thatched roofs, the brick or half-timbered gables, and the lovely gardens which captivated us. In France it was similar features perhaps but with an entirely different flavor given them by a different people. And so in Belgium, in Holland, or elsewhere, it was the individual character of the town or landscape which pleased us most and held our attention.

Southern California's traditions, her climate, and her scenery, all suggest a different type of architecture from that of the rest of the United States. When Cabrillo landed in San Diego harbor and Father Junipero Sierra established in San Diego the first Spanish mission, they did more there than mark the inception of a great religious movement; they touched the chord of a natural theme for the architecture of a large portion of the United States. Its variations have been played with varying success in the past, and they may still have further vicissitudes before them, but the original theme, touched again at Santa Barbara, again at San Juan Capistrano and wherever the missions with their deep reveals, soft-red tiled roofs, and lovely walled-in gardens were built, will always remain a powerful influence upon the architecture of this portion of our country. When Americans began to populate California they used the mission style almost exclusively for a while, but more often than not they handled it poorly, copying its inconsequential mannerisms, such as plastered walls and curved gable lines rather than its stronger and more essential features such as deep reveals, well-planned patios, and good proportions; and as a consequence their interpretation of it fell into disrepute. Men of taste, even those who admired the original missions, finally felt obliged to speak of the so-called mission style apologetically. Some kind of substitute was therefore demanded by many and the Italian style has been much used for the purpose. This is largely justified by the fact that Italy has much the same climate and scenery as has southern California, and also by the fact that the root of much original Spanish work was Italian. But while Italian architecture often sets extremely well in California, it is rather inflexible in plan, and also it is somewhat too formal in appearance to hold its own for long as a predominating style there. The Spanish, on the other hand, is equally amenable either to formal or informal plans, large or small houses, and often possesses a certain joyousness, suggested by its florid aspect, which finds a ready response in the far-western temperament. It required but the emergence of the San Diego Exposition buildings in Spanish colonial to fan these somewhat obscure characteristics into a definite and popular flame. Soon after the exposition opened, certain wealthy builders of Santa Barbara and Pasadena, men also of taste, ordered houses designed in Spanish colonial. This influential initiative started a wave of the style throughout southern California. Whereas Santa Barbara's residence section five years ago had scarcely a building suggesting the Spanish, to-day it has dozens of large and important structures so designed. In the town of Nordhoff an entire business street was camouflaged with a Spanish arcade built in front of rather poor-looking frame structures and covering the sidewalk, while the town-hall and post-office were designed to match. Schools, college groups, railroad-stations, and churches followed the vogue, and the progress of the

Main entrance, residence, J. H. Pershine, Santa Barbara, Cal. Myron Hunt, Architect. The crest over the door is taken from the authentic coat of arms of the owner, granted by the King of Spain.

style, only temporarily arrested by the war, has been already resumed with new vigor.

One of the most interesting houses of the type and by far the most individual is that of Mr. Julian Eltinge, of Los Angeles. It is situated on the top of a hill so steep that an automobile will scarcely climb it, and upon arriving at the apex of the hill one has to descend for a short distance at an even steeper grade to enter the property. There is the wisest of methods in this choice of location, however, for the grounds thus overlook a beautiful body of fresh water called Silver Lake and a lovely surrounding stretch of hilly countryside and distant mountains. Because of this unusual situation, the house, although but twenty minutes' ride from the centre of the city, seems removed therefrom many miles. The grounds have a high stucco wall around them, and, after passing through the entrance-gates, one enters a forecourt the left side of which rises steeply, the slope being planted with aloes, cacti, and similar plants indigenous to California. The opposite side of the forecourt, bounded by a low wall upon which have been placed many potted plants in ojas and similar Spanish receptacles, looks out over Silver Lake. Beneath it, at a much lower level, is another portion of the garden containing a pool running almost its entire length. The house is striking in appearance, partially on account of the unusual texture of its stucco walls and the highly successful use of strong color upon them, but largely because of the extremely picturesque composition of its masses. The stucco walls are rough in texture but not in the usual way; they might better be described as undulating in surface. Plasterers ordinarily use a tool called a darby, consisting of a long strip of wood, which is dragged over the surface of the plaster when it is soft, thus levelling it to a perfectly even surface. The use of this tool was here omitted, the character of the hand-work of the trowel being thus better preserved and a much more interesting texture secured. The first story of the building is ivory-white in color, the second a dull half-salmon, half-orange red, and the window frames and sash are a dull blue. The main floor is about a story's height above the level of the forecourt, and that part of it first seen as one approaches juts out with a bold overhang supported upon huge, mediæval-looking corbels. The main entrance is farther on, and over its centre rises a square tower having a recessed balcony in the story above, the openings of which are divided by columns decorated in polychrome, and the recessed walls of which are of a deeper orange than those outside. The entrance-door, also decorated in polychrome, is reached by two flights of steps, and the platform dividing them leads to another portion of the garden at a still higher level. Upon this platform is a wall fountain set in a niche and embellished with gayly colored Spanish tile, around which Mr. Eltinge has trained a squash-vine with its enormous leaves and yellow flowers. Upon entering the house the hall is seen to be circular in form, and a winding brick staircase with iron hand-rail leads to the main floor above. The ceiling of this hall has been vaulted and has been decorated in a way which makes it one of the noteworthy features of the house. A painter working on the job had asked permission to do this decorating by the use of allegorical figures. So startling a suggestion from one who was not known to be an artist was at first parried by the architect, and the owner happened to be away. The man persisted, and was finally allowed to make a sample panel. He had come West originally to help with the decoration of the San Francisco fair, and the result of his panel was so wonderfully effective that he was told to complete the ceiling. Upon the return of the owner he was also engaged to do similar work elsewhere, including a much larger ceiling of the living-room. He is Mr. Martin Syvertsen, and his work, characterized by exceptionally good color and decorative

The patio, residence, J. H. Pershine, Santa Barbara, Cal.

RESIDENCE.

NICHE ON STEPS TO ENTRANCE.

Pierpont Davis, Architect.

RESIDENCE, JULIAN ELTINGE, LOS ANGELES, CAL.

Fireplace, Santa Barbara Country Club. Bertram G. Goodhue, Architect.

effect, contains figures which, while not in any sense so pretentious, nevertheless recall some of those of Michael Angelo's in the Sistine Chapel, and they have been washed down to appear as though worn and mellowed by age. The plastered walls of the hall and living-room are colored to harmonize with the ceilings, and the texture of these walls as well as those of the rest of the interior has been done in a manner similar to those of the outside of the house, using no darby and allowing the trowel-marks to show. This unusual texture effect constitutes one of the noticeably successful features of the interior.

The floors of the house, instead of being made and treated in the ordinary manner, with narrow pieces of polished hardwood, are constructed of boards six, eight, and ten inches wide, which have been scraped relatively smooth with a scraper, but not sanded or polished. This adds another touch of handwork and holds a corresponding interest.

It must not be supposed that these unusual methods are merely those of a man who has wished to do the eccentric in building operations. They have, it is true, been carried somewhat further here than in most houses, as becomes a bachelor actor and artist who loves beautiful things and knows how to compose them in daring and unusual combinations, but they are also typical of methods employed in lesser ways in many southern California houses planned in this style; and they represent a movement in connection with it toward a freer use of building materials. In the art of painting there is a certain school the adherents of which paint with fine brushes and with faces close to the canvas, in order to secure minutely perfect results, and another in which coarser brushes are used, and they look at it from a distance to secure bolder technic. These building methods may be likened unto the latter school of painters. They are not as precise or as careful as those more commonly used, but there is a rugged virility about them not present in the others. They get back to the methods of mediæval days, the vigorous hand-work effects of which are prized to this day. It has been said of Mr. Eltinge's house that it is, on the face of it, the home of an actor and would not be suitable for any one else. This may in a measure be true, and should be true, for the house should suit the man; but there is also another fact regarding it. It is also the home of a master artist who unreservedly placed his work in the hands of a clever architect and an equally capable decorator. Without such a triple combination of unusual ability no such home, at once unique and splendidly harmonious, could have been produced.

Living-room window, residence, Mrs. E. M. Fowler, Chino, Cal. Myron Hunt, Architect.

RESIDENCE, TODD FORD, PASADENA, CAL.

Reginald Johnson, Architect

Gardens and Their Ornament

Famous and Historic Examples of Entrance-Gates, Pergolas, Loggias, Steps and Balustrades, Bridges, etc.

HOW much of the dignity and stately beauty and romance of the great English country and manor houses was and is due to their beautiful landscape settings, to their gardens and architectural and sculptural decorations of the garden! And the same comment applies to France and to Italy, especially to the latter country, from whence came so much of the inspiration that made the English gardens so notable. There have been many books written on the great gardens of the world, and hardly a garden in Italy or England but has had its commentators as well as its painters.

Flower borders in the kitchen-garden at Orchards, Surrey.

In early days in England the great houses were defensive castles shut away from approach by moats and thick-wall keeps and drawbridges, the castles of "Marmion," of mediæval robber bands and raiding barons. It was not until the time of Henry VIII that ornamental gardening in England began to assume importance and distinction. It was in Elizabeth's time that such great houses as Longleat, Woollaton, Hardwick, Kirby, and others were built, monuments alike to the tastes of their owners and to the skill and invention of contemporary architects.

"The more important garden ornaments, fountains, statues, vases, and other works of sculpture were not in general use in the gardens of the earlier Elizabethan houses; they were to come later, especially after the Restoration, when a great expansion of garden design took place. The magnificent gardens at Versailles had been laid out and built by the eminent garden architect Le Nôtre, some of whose designs were obtained for the additions and improvements carried out by Charles II at Hampton Court in 1669. It was then that the great canal was made and the avenues of Limes were planted that are still in existence. The same influence pervaded all England, and in the larger number of the great places laid out at the end of the seventeenth century will be found the long lines of clearing in woodland or of special planting, diverging from one point, probably the middle of the main terrace. These lines give reposeful dignity and that impression of vast space that was aimed at by the leading designers of the French school. In the nearer portion of the wood (the 'Bosquet' of the French, so familiar in the pictures of Boucher and his contemporaries) the trees were clipped to form walls of green, important points, such as inner junction of alleys, being punctuated by fountains or statues. These were the scenes of many brilliant summer fêtes in connection with the near gardens, that were also walled with high hedges close-shorn, decorated with niches for sculpture, and pierced with arches for the passage of the paths. But every style becomes liable to accretions that were not contemplated by its original founders and that are not always to its advantage; thus the French gardens of the eighteenth century were encumbered with a vast number of plants in pots placed along the terraces and garden-paths, a fashion justly ridiculed by the critics of the day. But even through the reign of William and Mary, when it was inevitable that much Dutch influence would be likely to prevail, the large,

The bridge at Blenheim Palace, Oxfordshire. By Vanbrugh.

Fountain basin with a beautiful tazza of Belgian black marble and figure groups by Mr. John Hughes. The curb has eight bronze tortoises on half-round balls that spurt into the basin. Heywood, Queen's County, Ireland.

simple schemes of the French style, and especially the long, converging woodland avenues and their lesser counterparts in the garden, still held their own. John Rose, gardener to Charles II, worked under the direct instruction of Le Nôtre. He was followed by the partners London and Wise, who in the reign of William and Mary made further large additions to the gardens of Hampton Court. With Kent, before the middle of the eighteenth century, came the change to the landscape style, when all straight lines became abhorrent and the old ways of gardening were considered barbarous and only worthy of abolition. Then, near the middle of the century, came Lancelot Brown, who was widely employed and who continued to sweep away the older gardens with their parterres and trim hedges. Later in the century he was followed by Repton, and the same work went on.

"It was not till early in the nineteenth century that the principle of the Italian garden was again recognized as desirable, and straight, wide terraces with noble stairways and flowery parterres were laid out by Sir Charles Barry and succeeding designers. By this time the possibilities of the desire to make use of these led to what we know as the bedding system. By the middle of the century this way of gardening was practised to the exclusion of almost all other horticultural consideration. The hardy plants of the older gardens were not thought worthy of cultivation and were banished, and even the smallest places must have their beds of tender plants put out for the summer months only. Happily, a wholesome change again came about, and the last thirty years of the nineteenth century saw the old plants restored to favor and their number largely increased by the discoveries of botanical travellers. The interest of modern gardens has also been greatly extended by the use of the flora of alpine regions of the world and by the cultivation of the most beautiful of swamp and aquatic plants.

"But we have always to remember that it is to Italy that we have to look for examples of the highest development of ornamental features in connection with garden design. When we remember the conditions under which the great gardens of Italy came into being, it is no longer a matter of wonder that they should stand out as examples of excellence both in general design and in finished detail. For they were made at a time when there was that extraordinary revival of learning, and of development in all the branches of fine art, that we know as the Italian Renaissance of the fifteenth and sixteenth centuries. And when we read of a giant in architecture such as Bramante, the creator of St. Peter's and the Vatican, designing, with Raaffaele, the gardens of the papal palace and those of other princely houses, and of all the most exalted talent that could be found being employed upon the gardens of the many palaces and pleasure-houses of the courtly centres throughout the land; of the popes and princes of the great houses of Medici, Sforza, d'Este, and the rest, giving their personal encouragement and pouring out their wealth for the making of their gardens, one is the better prepared for their splendid design and endless variety of sculptured ornament. Numbers of the best of these gardens have perished altogether, and of those that still exist many are in a state of ruin, but enough remain to impress us with the grandeur of style and to delight us with admiration for the amazingly fertile invention and varied manner of treatment of the vast quantity of ornamental detail."

To-day the landscape architect is more than ever an important factor in the development and planning of the

Kirby Hall, Northamptonshire. Gateway with broken pediment and heraldic shields and garlands. A notable example of English Renaissance design and treatment. Possibly the work of Inigo Jones.

large country house, and he naturally goes back to study the methods and traditions of the Italian, English, and French masters of garden-making.

With the growth of the garden developed various conventional forms of ornament, such as Entrance-Gates, Steps and Balustrades, Urns and Sculptured Ornaments, Stone-Paved Courts and Garden-Seats, Loggias, Orangeries, Garden-Houses, Parterres, Sun-Dials, Pergolas, Canals, Ponds and Water Gardens, Bridges, Fountains and Wells, Flower-Borders, Wall-Gardens. Many of these were designed by men famous in the architectural world.

During the time of the English Renaissance, beginning in the days of Henry VIII, and reaching its full development in the succeeding Tudor and Jacobean reigns, the most usual form of gateway piers, whether of brick or stone, was a structure of square sections, finished with a cornice surmounted by a stone ball. In the more important examples, instead of a cornice only, there was often a whole entablature with a top ornament, which might be either a vase of lead or stone or some heraldic form or other sculptured figure. There were also architectural additions on either side, forming lesser gateways, or with niches only. The piers themselves often had niches in the lower portions, with sculptured ornament above, as in the flower-pot gates at Hampton Court. These niches were not necessarily for the placing of sculpture, but to gain the advantage of light and shade, an effect which is specially valuable where they occur in the flanking screens.

The Palladian bridge at Stone House, Buckinghamshire; middle eighteenth century.

It was not till early in the seventeenth century that iron was used for any part of secular entrance-gates in England or, indeed, for any ornamental work connected with architecture other than ecclesiastical. In earlier times gates were of wood, strapped and bolted with iron, then of wooden framing with bars only of iron, and perhaps an iron cresting on the top. Gates of iron alone were only sparingly used in the time of Elizabeth and James I, and it was not till near the end of the seventeenth century that the finest examples of such gates were made in England, when that remarkable master in smith's work, Jean Tijou, was in England in the time of William and Mary.

Where garden ground slopes steeply there will necessarily be terraces, near or far apart, according to the degree of the gradient, and they will be connected by flights of steps. The gardens of the Italian Renaissance, many of which were built on hillsides, give us the finest examples of such terraced treatment. In those of the great villas the retaining wall was crowned by a balustrade with piers at intervals, each pier bearing an urn or vase or sculptured figure. The stairs, in noble, easy flights, and the landings, were also bordered by a balustrade with piers bearing ornaments. Where the hillside falls rapidly and the space does not allow the steps to come in the natural and obvious way, namely at a right angle to the terrace, the difficulty leads to a simple device, which makes the stairway all the more beautiful and important.

"If one may assume a typical arrangement of the entrance front of one of the fine old manor-houses of the sixteenth and seventeenth centuries, one may say that it stood anything from forty to seventy feet back from the road, with an enclosed forecourt either all paved or with flagged path with grass on each side; the path passing straight from the road to the front door. If the house stood on a slightly higher level there would be a few steps flanked on either side by a dwarf retaining wall at some point on the approach a good deal nearer the house than the front entrance, and this upper space would be entirely paved. In many cases these manor-house entrances have more recently been made into gardens, and one cannot but think that the gardening has often been overdone; for it is the safest rule

to keep the entrance side quiet as to showy flowers, and to reserve the main display for the garden front of the house. Such a rule always works out well in practice, and, indeed, the use of such restraint involves no penance, for what is more delightful than Box, Bay, and Rosemary, Skimmia and Alpenrose, and the handsome ground greenery of Lent Hellebore, Megassa, and Acanthus? A large proportion of these green things with a few flowers only, such as Lilies, China Rose and Columbines, gives an appearance of dignity to an entrance-court such as would only be lessened by a more lavish use of flowers.

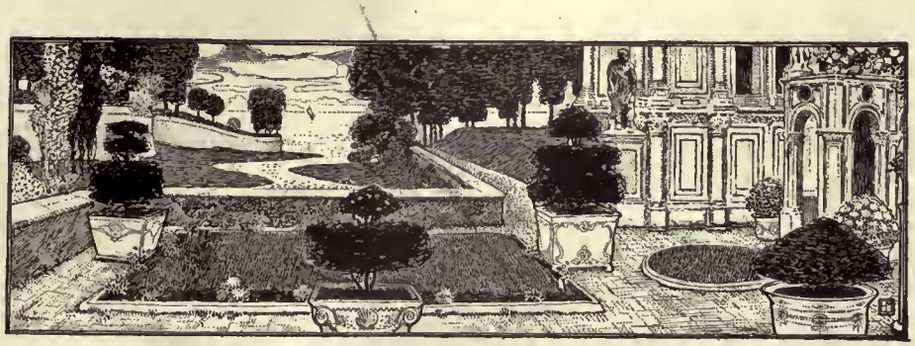
It is a different matter in the case of a paved place which is purely a garden court, that is, an enclosed space of actual flower-garden; for here the bright flowers are strictly in place.

High retaining walls, well clothed, at Cliveden Court, Somerset.

In many of the books that have been published about famous gardens, some of these ornamental details are in evidence, but no such comprehensive showing of garden ornament has heretofore been available as is gathered in Miss Jekyll's very notable book recently published.* It is a perfect cyclopædia on the subject, with a superb series of plates showing the most notable examples in the world.

"It is hoped that these illustrations of all kinds of garden ornament, now brought together for convenient study and comparison, may serve not only to quicken the interest in beautiful gardening but also to show how ornament may best be applied, according to the quality or calibre of any place. The descriptions and critical remarks are to be taken as suggestive rather than authoritative, but they will be useful in directing attention to the various objects and their judicious treatment, mainly as to the preservation of harmony and avoidance of incongruity. The overgrowth of good buildings by ivy and fast-growing climbing plants is pointed out in several instances; it is a matter that should receive much more attention, for ivy is answerable for the disintegration of much ancient masonry that ought to have been better guarded, and architecture of careful and refined character deserves better treatment than to be defaced or even obliterated by a rampant growth of common climbing plants."

* "Garden Ornament," by Gertrude Jekyll. London: Published at the offices of *Country Life*, 20, Tavistock Street, Covent Garden, W. C. 2, and by George Newnes, Ltd., 8–11, Southampton Street, Strand, W. C. 2. New York: Charles Scribner's Sons, 1918. Large folio, cloth, with over 600 full-page and text illustrations, *net*, $28.00.



Editorial and Other Comment

To Build or Not to Build Now

A WELL-KNOWN Western architect writes: "I am firmly convinced that the one thing the building public wants to know is the cost of building to-day as compared to the next three to five years. If they could be assured that the cost will not drop within that time, there would be a tendency to proceed with the needed work."

This is the problem that confronts the architect everywhere, East and West, North and South. Arguing from analogy, going back to conditions that followed the Civil War, and anticipating the unprecedented demand for materials that will follow the resumption of general building, there doesn't seem to be any very hopeful prospect of any considerable reductions. In an address by Senator Calder, of New York, before the Builders' Association at Baltimore, he said:

"You are now met with the problem of whether one can afford to build under present prices. My own opinion is that prices will never return to where they were before, and, while there is bound to be a period of reconstruction serious to your trade, the ingenuity of the American builder is such that he can, by substituting materials that will answer the same purpose, obtain a lower price, and make up, to a certain extent, the difference in increased costs.

"There is a real demand to-day for housing all over the country, and if I were to offer advice it would be to urge builders to watch their opportunities, and be prepared to take advantage of them when they are presented."

This also seems to be expressive of a very general feeling. As an offset to high prices of materials there is, from another point of view, the compensating factor of greatly increased rentals. The Department of Labor at Washington is making a vigorous campaign to stimulate and encourage the building of homes, and from many offices come reports not only of the crying need for such building, but as well the hopeful sign of the drawing up of many plans. In most minds the real problem is the one of stabilizing the prices for labor. Cost of materials may be accepted more or less as a fixed charge, but the uncertainties concerning labor no one can at present predict. One of the most cheering optimists among the members of the architectural profession, Willis Polk, of San Francisco, is consistently preaching the doctrine of "build now." In New York, where there are many large undertakings awaiting development, the chief trouble seems to be, according to one authority, lack of co-operation on the part of financial interests.

"We have in the United States serious difficulty owing, principally, to the unwillingness of financial interests to co-operate in building projects with the material and labor market in its present condition. We are working on a total of nine industrial projects involving approximately 6,000 workmen's homes, to be carried out by private interests in various important industrial centres, but in each case we are hampered by the building loan situation. The only definite work we expect to carry out without delay is located outside of the United States."

A Further Word on War Memorials

AN editorial in *The Evening News*, of Newark, N. J., one of the most influential newspapers of the State, finds occasion to comment favorably upon the editorial in our February number, and to say that our suggestions for service memorials reflected the thoughts of many of their readers. In this connection we call attention to a circular issued by the American Federation of Arts, whose headquarters are in Washington, containing a list of appropriate memorials and the names of the members of the General Committee on War Memorials. It would be well for local committees planning memorials to send for this circular. It may help them to evade some of the mistakes that have been made in the past by zeal unenlightened with any trained judgment in matters of art. The annual meeting of the Federation in New York in May will be devoted to a discussion of various phases of the subject of war memorials, past and present.

No doubt the rapid growth of art museums throughout the country will have had a beneficial effect upon public taste, and there is a vast amount of expert advice available merely for the asking. It will be a pity if it is not called upon. The architects everywhere are ready to co-operate, and they should be consulted whenever the opportunity offers.

On the Education of the Architect

A PUBLICATION that comes to our desk with especial welcome is the "Bulletin of the Illinois Society of Architects," edited by Mr. F. E. Davidson. It is a live wire, and from its pages we derive not only pleasure but profit. From a recent number we take the following concrete suggestions. They put in condensed form a more detailed report on the question of architectural education:

"1. Affiliation with architects' offices, students to spend four months in accredited offices in superintendence and drafting.

"2. Affiliation with accredited construction companies, students to spend two months in estimating and superintendence.

"3. Extension of course to five years for architectural diploma, draftsman's diploma may be given at the end of four years.

"4. Present so-called Beaux Arts system of elaborately rendered plans and elevations to be changed.

"5. The orders and details to be studied full-size in pencil.

"6. All problems in design to be studied in perspective, as well as elevation, and presented in pencil with little rendering.

"7. Problems in design to be small and practical for the first four years, and studied in relationship to the materials used.

"8. All problems in design to be roughly dimensioned and annotated.

"9. The thesis to be a small practical problem, worked out in a complete set of working drawings with specifications attached, and to be presented in the second half of the fourth year.

"10. Antique, Mediæval, and Renaissance decorated forms to be studied only in connection with the History of Architecture.

"11. The subjects of Chemistry, Calculus beyond the elements, Physics, Applied Mechanics beyond Statics, Spherical Trigonometry, Analytical Geometry, to be omitted.

"12. Shade and Shadows as a science to be omitted, students to get their knowledge largely from nature.

"13. Study of ornament to be based on a study of nature, and indigenous and geometric forms.

"14. Interior Decorating to be taught with instruction in the nature of textiles, glass, ornamental iron, tiles, etc.

"15. Practical elementary Surveying to be taught, with simple field work.

"16. The design of industrial plants with modern method of unit multiplication and factory construction to be taught.

"17. A course in housing, with its social relationships, to be taught through lectures and reference reading.

"18. The science and history of City Planning to be given as an elective study.

"19. A course to be given in business promotion, showing sound methods of promoting and financing building operations.

"20. Extemporaneous speaking to be taught through practice in presenting building projects.

"21. Last, a general change in spirit to be awakened in the schools to the ultimate end of modernizing and Americanizing the education of the architect."

Our Great Need for Better Teaching of Industrial Art

A NEW era is dawning in the industrial arts field; war brought the opportunity. The war forced us to choose between aping Europe again now that the job over there is finished, or standing upon our own ability in the broad field of high-class industrial art production and furnishing Europe from here. The schools must get to work in this serious business. The general schools must make their work in drawing useful; the schools for manual craftsmen must be busier and harder at work than ever; the schools for teaching designers have the greatest task for they must assure for us fine design for production on a large scale. And for this great work, which must be got under way immediately, our present schools are hopelessly insufficient in number and individually inadequate to the task. We have not a half dozen; we need a hundred even now. Where are the great men who can see America's opportunities? Where are the educators that can lead and mould public opinion? Where are the long-headed manufacturers who have failed to regard schools as an asset yet who cry for designers now that Europe has called them back to defend the schools that trained them? Are there no giants among us who will assure the future of America in this field by acting at once? Let us have schools of industrial art, always more schools, and give them to us now!

RICHARD F. BACH,
Associate in Industrial Arts, Metropolitan Museum of Art.

Art in French Homes of the Eighteenth Century —M. de Ricci the Guest of the Architectural League

ON March 13th the Architectural League of New York gave a dinner to Seymour de Ricci of the French High Commission, now in the United States.

Monsieur de Ricci was selected for his art mission because of his well-known talents as a student of the industrial arts of France, and because of his knowledge of the history of Gallic home-making.

The subject for discussion, illustrated with lantern slides, was "Art in the French Homes of the Eighteenth Century," illustrating the history of the home-furnishing crafts in the days of Louis XV and Louis XVI, including the most characteristic examples of fine French craftsmanship applied to the making of furniture, textiles, porcelain and metal work.

The National Baptist Roger Williams Memorial

THE National Baptist Roger Williams Memorial is to be erected in Washington, D. C., on a triangular piece of property at the intersection of Sixteenth Street and Columbia Road. There is an existing building on the rear of the site, now used temporarily as a church, which will be altered and connected with the church proper, and will be utilized as a Sunday-school.

The church is to be a National Baptist Headquarters and a memorial to Roger Williams. A statue of him is one of the main features of the façade.

The interior of the church is circular in plan, although the building is polygonal on the exterior. It will seat approximately one thousand people.

Timely Slogans from the U. S. Dept. of Labor

Let's make America a better place in which to live. Build now the homes, churches, schools, and roads which the war stopped.

Farms, factories, mines, and furnaces must produce as well for peace as for war. Production is the key to Prosperity.

One of the best uses for money earned during the war is to set it to work on building a home of your own.

Build now that City Hall, Courthouse, Schoolhouse, Church, Factory, Memorial. Build Now.

Stinginess puts savings in a sock—Thrift puts savings into a home.

Construct now for a greater and still happier America.

PAVED PATHS AND PLATFORM IN THE SUNK GARDEN AT EWHURST, HAMPSHIRE.

THE LILY-POND IN THE WATER-GARDEN AT BRIDGE HOUSE, WEYBRIDGE, AS SEEN FROM THE GARDEN HOUSE. By Mr. Harold Peto.

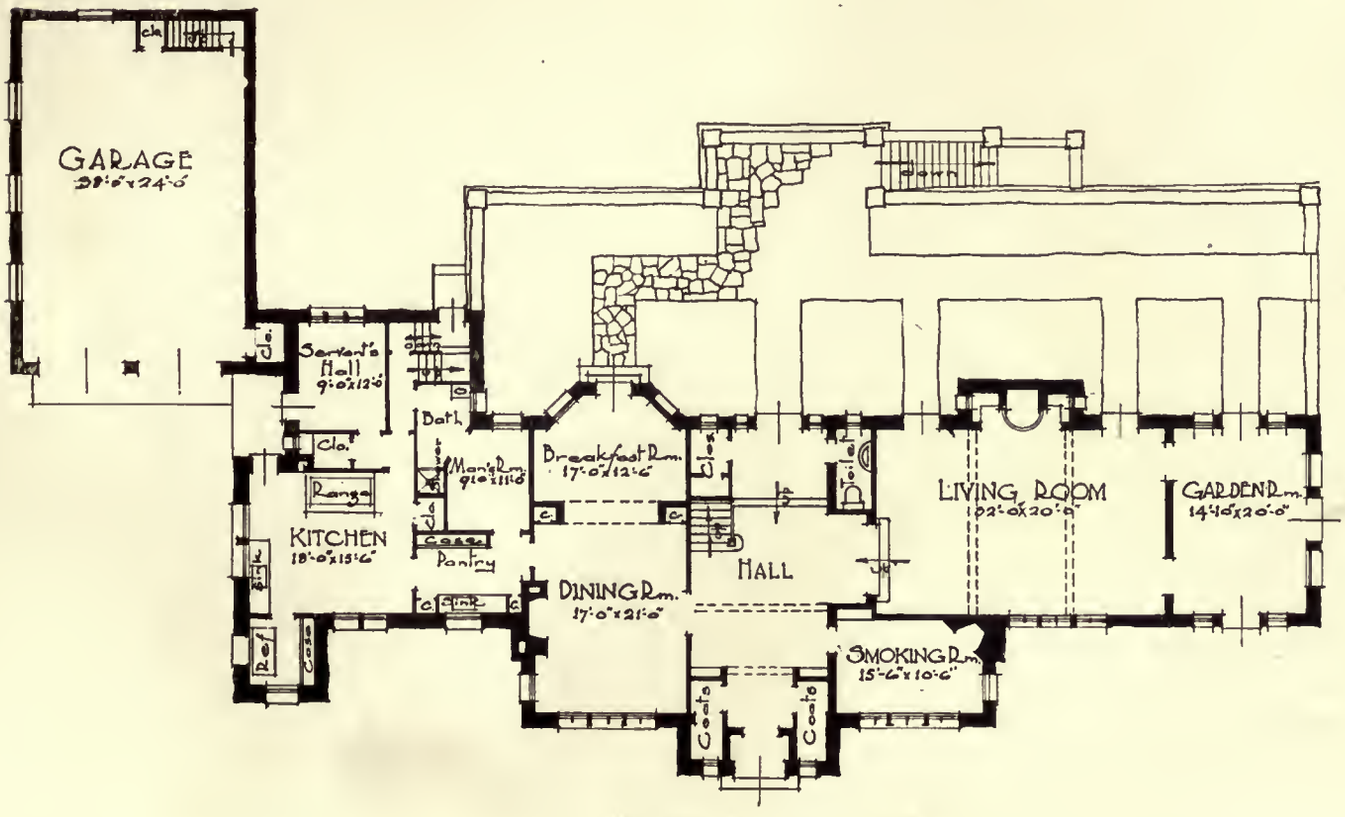
CLASSICAL GATEWAY AND PILLARED SCREEN AT EASTON NESTON, NORTHAMPTONSHIRE. EIGHTEENTH CENTURY.

RESIDENCE, W. V. LAWRENCE, LAWRENCE PARK, BRONXVILLE, N. Y.

Bates & How, Architects.

RESIDENCE, W. V. LAWRENCE, LAWRENCE PARK, BRONXVILLE, N. Y.

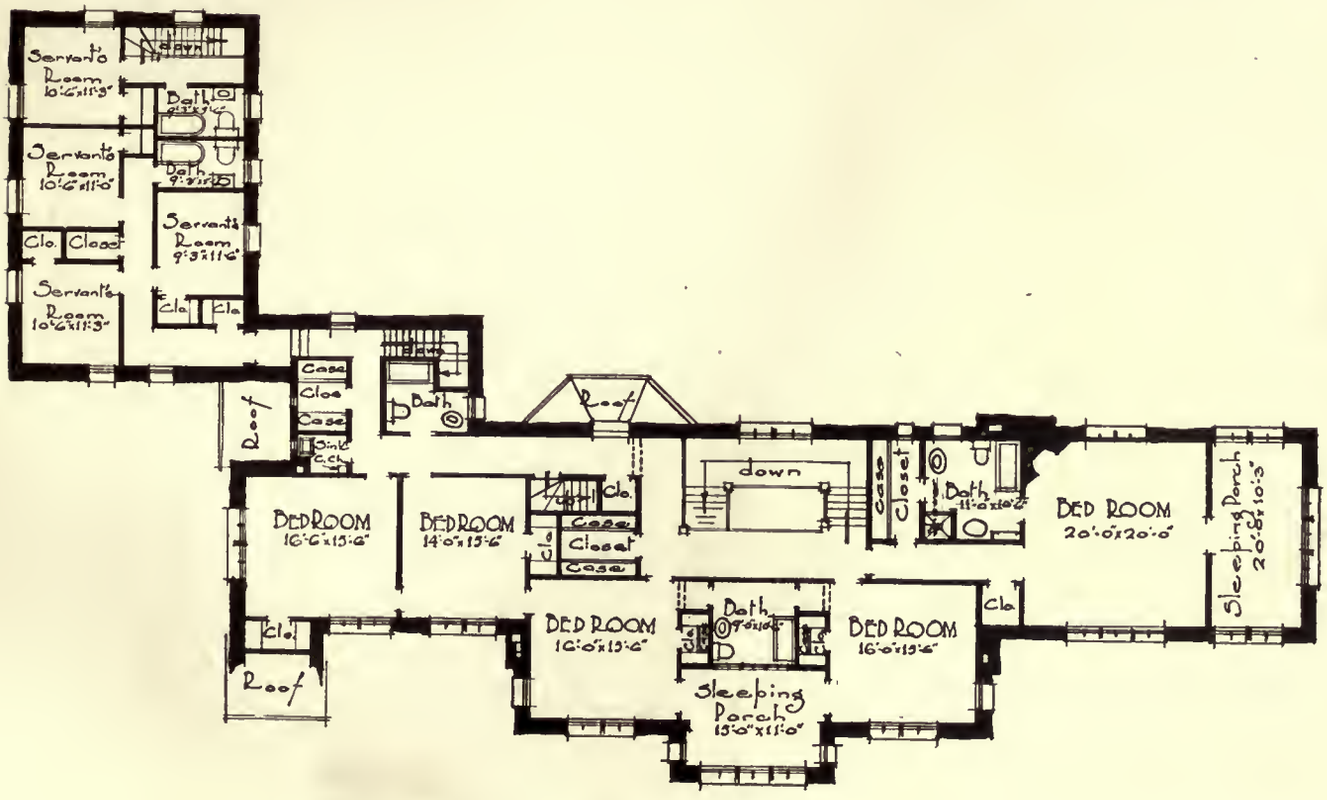
Bates & How, Architects.



FIRST FLOOR PLAN

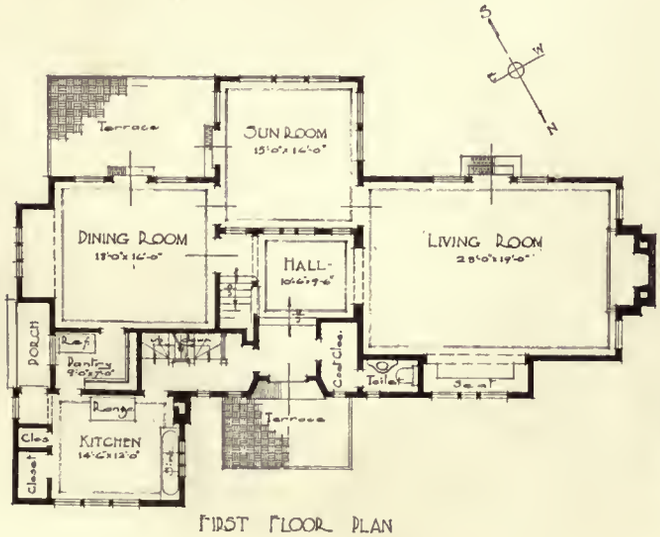
HOUSE AND PLANS, SAMUEL F. POGUE, CINCINNATI, OHIO. G. C. Burroughs, Architect.

DINING–ROOM.

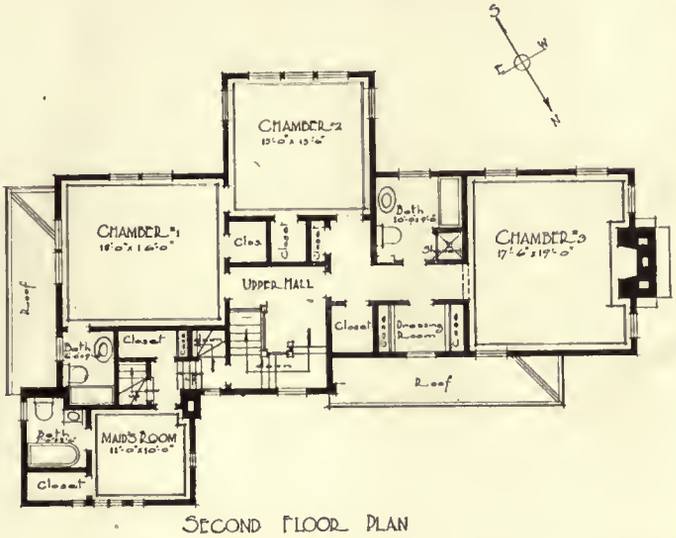


SECOND FLOOR PLAN

RESIDENCE, SAMUEL F. POGUE, CINCINNATI, OHIO. G. C. Burroughs, Architect.



First Floor Plan



Second Floor Plan

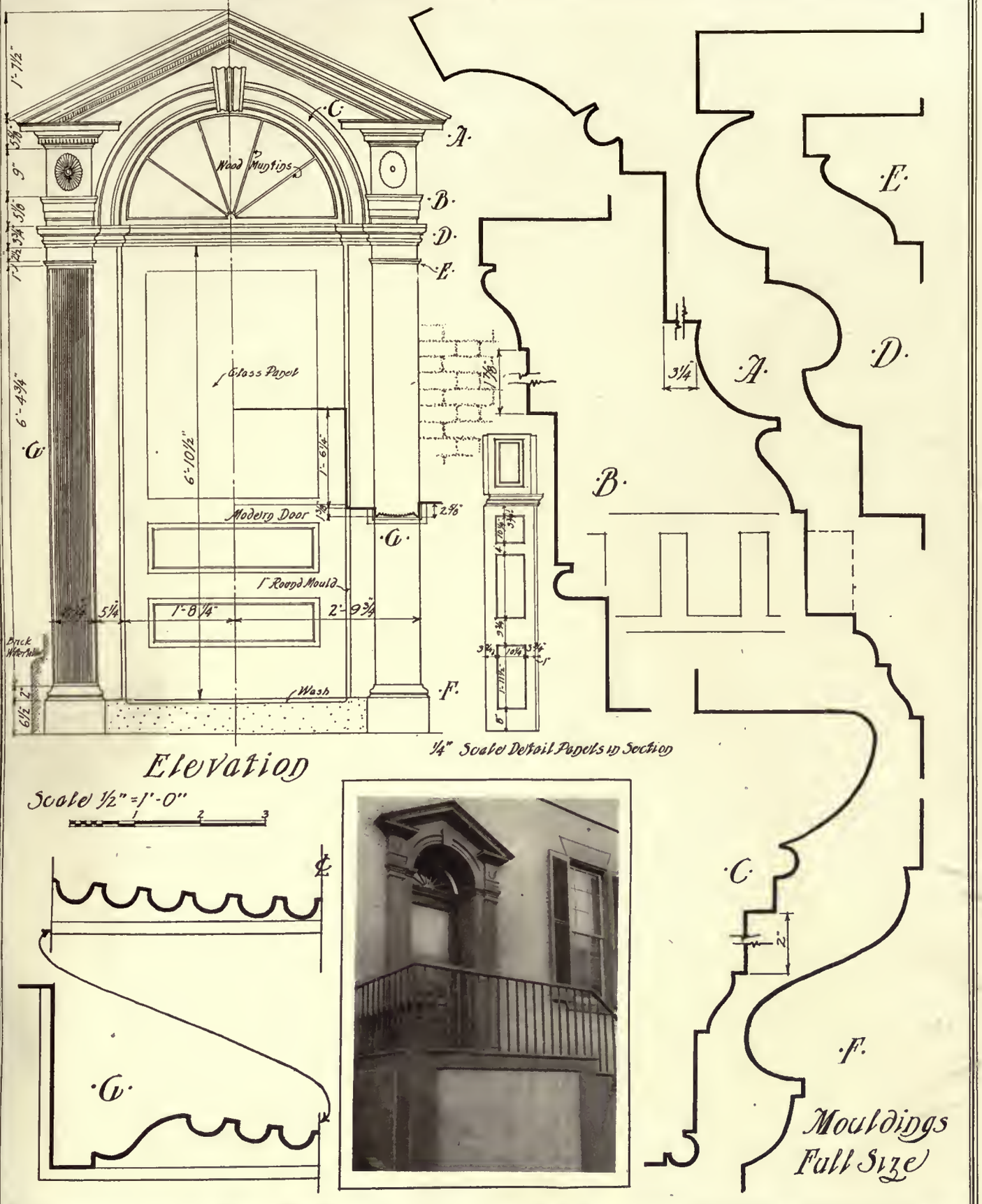
HOUSE AND PLANS, DR. FREDERICK W. LAMB, CINCINNATI, OHIO. G. C. Burroughs, Architect.

RANCH-HOUSE, NORTH YAKIMA, WASHINGTON. William M. Kenyon, Maurice F. Maine, Architects.

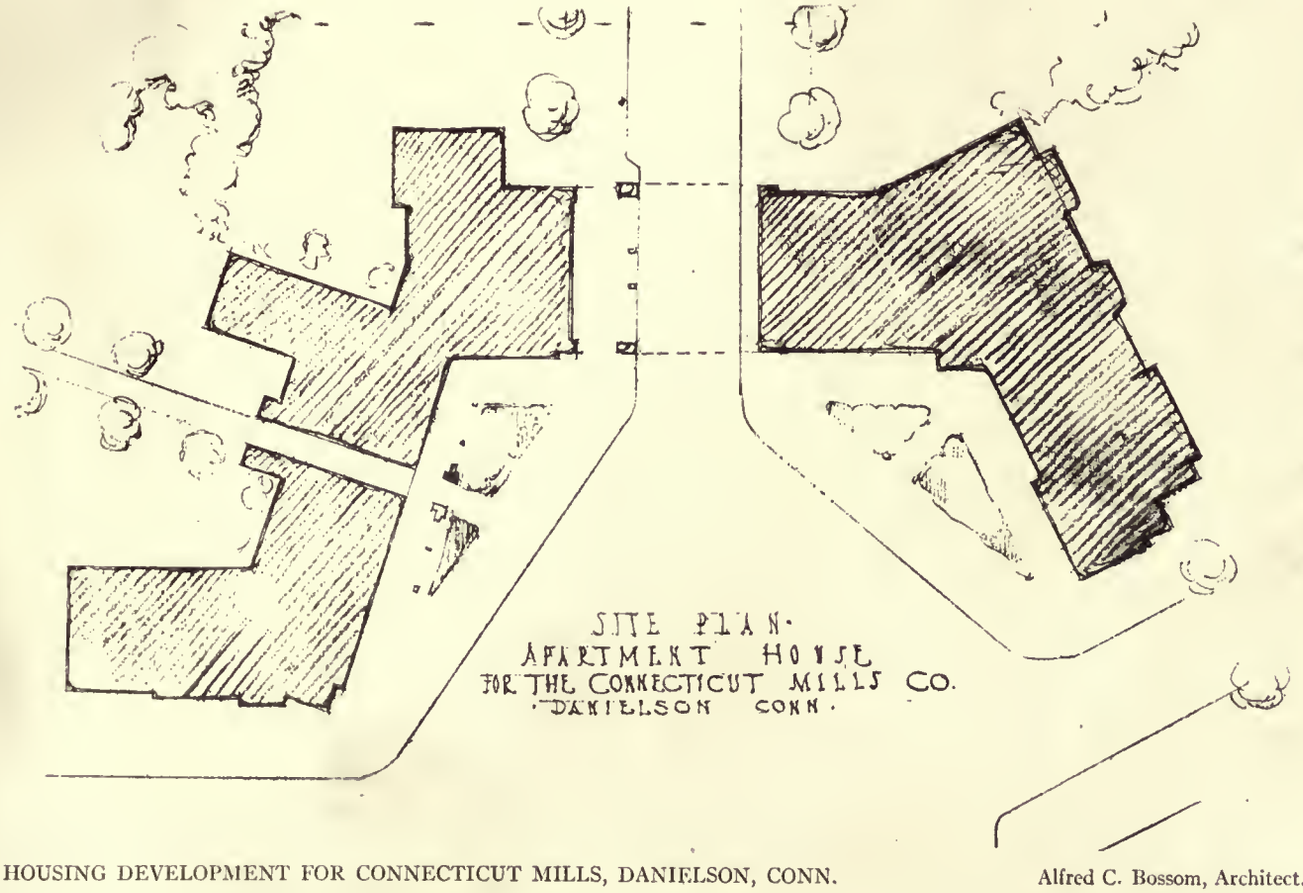
LIVING–ROOM.

LONG CORRIDOR LOOKING TOWARD TOWER. William M. Kenyon, Maurice F. Maine, Architects.

RANCH–HOUSE, NORTH YAKIMA, WASHINGTON.



Early Architecture of Virginia	Doorway ~ Taylor House Alexandria, Va Date About 1820 — Corner Duke & St Asaphs Sts.	Measured & Drawn By J. L. Keister O. J. Munson J. A. Weber



HOUSING DEVELOPMENT FOR CONNECTICUT MILLS, DANIELSON, CONN. Alfred C. Bossom, Architect.

MAIN BUILDING, FRONT

LEFT WING REAR

LEFT WING ; FRONT

LEFT WING, SIDE

STUDIES OF APARTMENT HOUSE FOR THE CONNECTICUT MILLS CO DANIELSON CONN.

RIGHT WING, FRONT

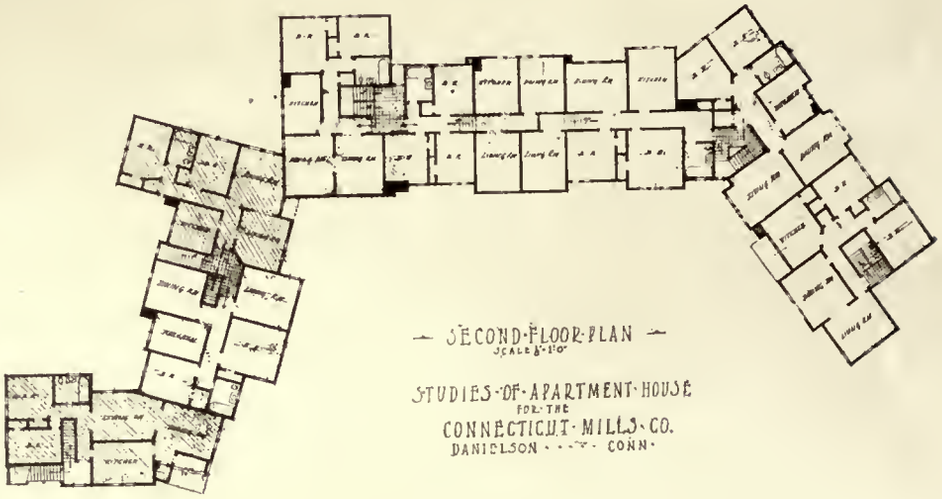
STUDIES OF APARTMENT HOUSE FOR THE CONNECTICUT MILLS CO. DANIELSON CONN.

RIGHT WING, SIDE

HOUSING DEVELOPMENT FOR CONNECTICUT MILLS, DANIELSON, CONN.

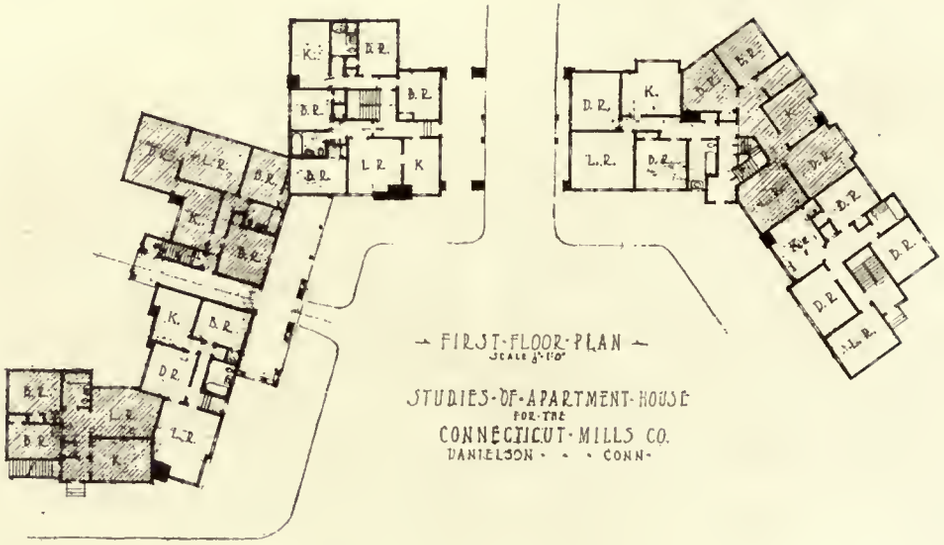
Alfred C. Bossom, Architect.

MAIN BUILDING, REAR



RIGHT WING REAR

STUDIES OF APARTMENT HOUSE
FOR THE
CONNECTICUT MILLS CO.
DANIELSON CONN



HOUSING DEVELOPMENT FOR CONNECTICUT MILLS, DANIELSON, CONN.

Alfred C. Bossom, Architect.

COTTAGES, HOUSING DEVELOPMENT FOR CONNECTICUT MILLS, DANIELSON, CONN. Alfred C. Bossom, Architect.

COTTAGES, HOUSING DEVELOPMENT FOR CONNECTICUT MILLS, DANIELSON, CONN. Alfred C. Bossom, Architect.

Danielson, a Unique Housing Development

For the Connecticut Mills at Danielson, Conn.

By Alfred C. Bossom, Architect

THIS is a unique effort to carry out housing welfare work with the greatest benefit to the greatest number.

The intention fructified in the mind of the prime mover, Mr. R. J. Caldwell, who possesses one of the largest financial interests in the Connecticut Mills, for whom the development is being made, and for some years past very considerable work has been undertaken in which Mrs. R. J. Caldwell has taken the deepest practical active interest, and as a result of this certain facts have been evolved:

1. Small rooms in that locality are undesirable, about 11x14 feet being the minimum.

2. Five-room houses are smallest size desirable, and houses of six rooms and a usable attic are the most preferred.

3. There must be a cellar entrance from both inside and outside the houses.

4. And a washing pantry with sink and trays is the solution of the kitchen-dining-room combination.

5. All plumbing should be on the ground floor.

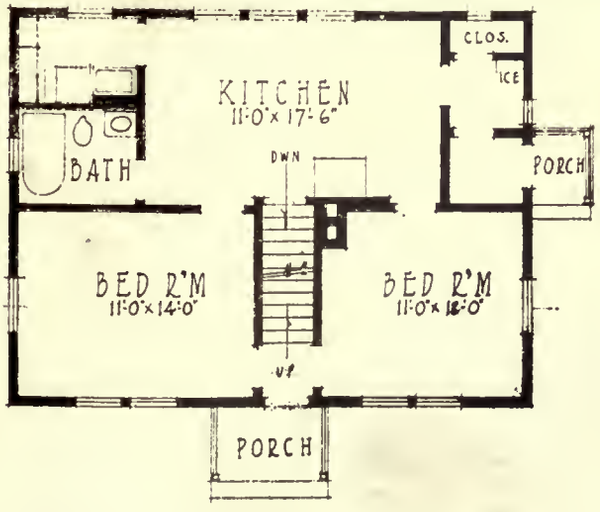
In this development typical plans have been worked out, and these have been submitted to all the officials in charge of the mill, and modified and changed until unanimously approved by all interested parties.

Cottage.

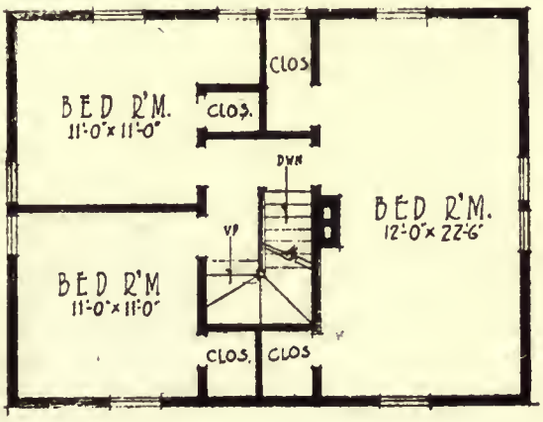
The exteriors of the houses here illustrated are all different, and the endeavor is being made to introduce interest and personality into each separate house. Stucco with slate roofs and a little brick or stone is the material employed in each of the smaller houses. There being a great need for stores on the property, a village centre of two and three story multi-family houses has been decided upon. The same principle has again been followed here, distinct personality and individuality to each apartment, sleeping-porches and private entrance are the rule, all with fire-resisting exteriors.

The many-family houses generally have not been found as popular as the individual or two or three family houses, but due to the greatly reduced cost of housing a family by this means a certain number of people are being provided for in the multi-family houses.

By following these lines definite estimates (exclusive of sewer, sidewalk, and road



FIRST · FLOOR · PLAN



SECOND · FLOOR · PLAN
TYPE - A

improvements) for contract for the six-room houses with attic are approximately three thousand dollars; two-family houses, six rooms and attic, twenty-eight hundred dollars; and average five rooms in multi-family house, twenty-two hundred dollars. These are present-day prices, February, 1919, and it is felt certain these will soon be materially improved upon—and yet provide the same or better accommodation.

The intention has been not to get more than 8 per cent gross return upon the investment, but this may vary slightly in certain cases as the rents of the houses belonging to the mills are fixed in conjunction with those of property owners in immediate vicinity to prevent tenants moving from one house to the other for the sake of a few cents a week difference in rent.

By experience the mill manager approximates that each replacement of an employee that takes place costs the mill one hundred dollars, and the annual replacement is approximately 20 per cent. With over five hundred hands employed in this mill, it is easy to see the overhead expense of replacements, and it is calculated, for instance, that if two replacements can be prevented, this equals the interest upon a three-thousand-dollar house.

Thus, if it is proved that the labor turnover is materially reduced, a more or less fixed relation can be established between the number of houses advantageously needed to the labor turnover.

Again, the general plan is not necessarily to sell the houses to the operatives. It is felt at this stage more desirable to keep greater control over the accommodation provided than would be possible if the houses were sold.

The writer (the architect in charge) feels very strongly on this point of selling or leasing. Surely it is totally unjust for the owner, with the greater amount of capital and facilities for rerenting the houses built, to expect a workman to guarantee to pay for a house in a certain location unless he—the employer—equally and at the same time guarantees that workman continuous employment in the location in question.

At Danielson experience may dictate a change of policy, but now this is the plan adopted. A welfare worker, with her own house, lives in the midst of the development, as does also the mill superintendent.

The complete scheme includes a nursery, already under construction, a complete, thorough, small hospital, with medical attendants, a gymnasium and movie auditorium for both sexes combined, and a local school may be added later, although over seventy children daily go to the town school, just outside the development limits.

Taken altogether, it is an example of carrying out a housing problem exactly as it should, theoretically, be operated, with the advantage of the architect having the heartiest sympathetic co-operation of both Mr. R. J. Caldwell, his wife, and all the mill people generally.

The North Yakima Ranch-House

By William M. Kenyon and Maurice F. Maine, Architects

THIS house is located in the beautiful Yakima Valley, noted for its apples, pears, and other fruits. The estate in which the house stands consists of 1,000 acres, devoted mostly to apple-raising. The house stands on a hillside, the lower grade being about 40 feet below the upper grade. All around are hills or low mountains far enough away to produce that purplish-blue effect that the artist loves to paint. From the court, on the first-floor level, one looks across a great expanse of country, picturesque in the extreme, but quietly showing evidences of industry which satisfy and please the eye. From the tower a much more extensive view is obtained, although from the court Mount Hood and Mount Adams are plainly visible.

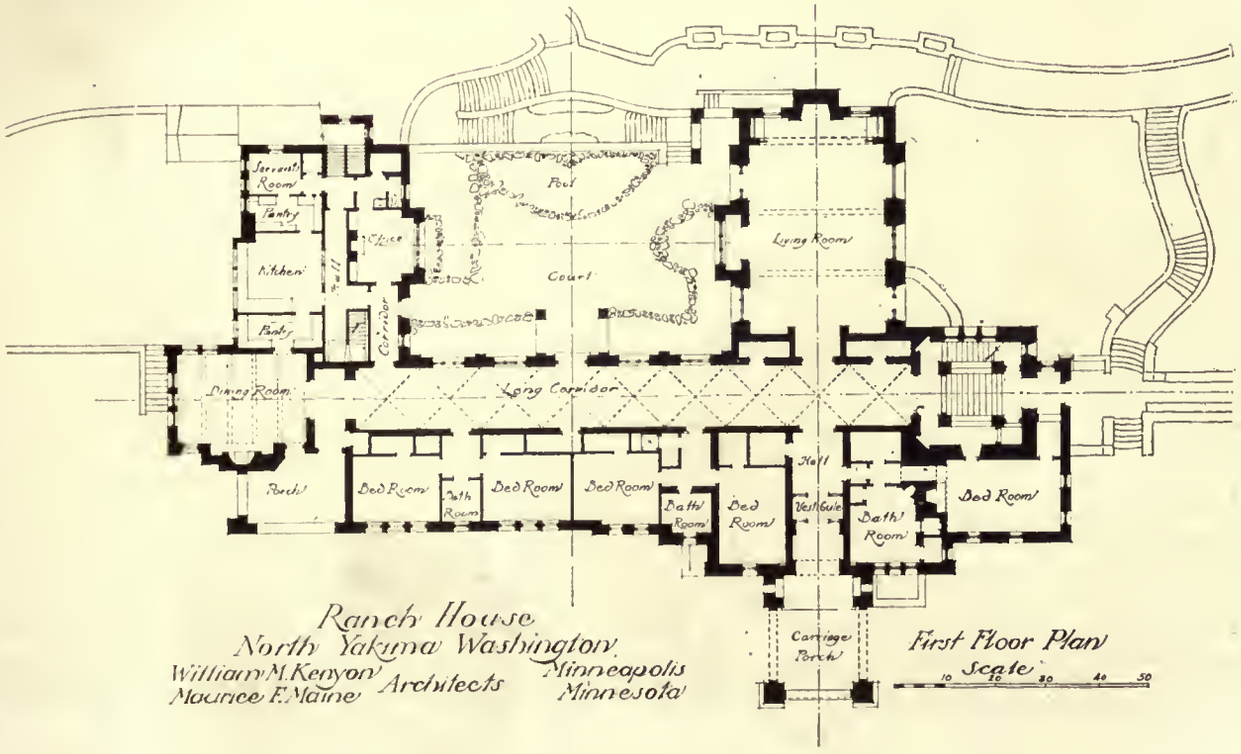
The exterior of the house is built of three kinds of stone, all obtained from the near-by mountains. One of these is a lava rock, gray in color, running into rusty white. Another is a moss rock quite irregular in shape and of various brown shades. The third is a black trap rock with a quantity of rusty gold mixture. These stones are laid up at random, with very little shaping, in large, light-colored joints. The situation calls for bold treatment, rugged detail, and, in general, everything on a large scale.

No attempt was made to follow any specific style of architecture, the aim being to make the house fit the site and appear as if it belonged there. On the lower level, a natural creek circles about and is spanned by two stone bridges, one of which connects with the lower stone wall.

The exterior walls vary in thickness from 2 to 3 feet, although the lower walls of the tower are 5 feet thick. The heavy timbers used on the exterior are hand-hewn Washington fir from the Cascade Mountains not far away.

The interior of the tower is of stone like the exterior, with stone steps ascending around a central open shaft. These steps lead up to a small inside lookout room just below the top or open lookout. From this room level the steps leading to the top are outside.

In the first story the long corridor connects the tower with the dining-room 125 feet away. This corridor, the living-room, and office enclose the court on three sides. The rooms, except bedrooms and kitchen department, are finished in rough resawed white oak with very light-brown stain and no other finish. In the second story there is a large library connecting with the tower and also having an opening with balcony into top part of the living-room. The balance of the second story is devoted to sleeping and bath rooms. In the basement the room directly under the living-room is a swimming-pool with access from the tower. In the other end of this story apartments are provided for the caretaker and family. There is a sub-basement under the caretaker's rooms, the floor level in this location being 6 inches above the level of the service court.



Some Reflections of a Draughtsman

By Talbot Faulkner Hamlin

I

ON ARCHITECTURAL EDUCATION

THE architectural draughtsman has usually been trained in one of three different ways. He may be the graduate of an architectural school, or he may be the graduate of any one of several evening trade-schools, or he may simply have received his education by a long process of absorbing his surroundings during a gradual rise from the status of office-boy to the dignity of T-square, triangle, and shiny instruments. Whichever of the three systems he happens to be a product of, the thoughtful draughtsman, as he grows into maturity, is very likely to submit his education to a close scrutiny; and in the light of his present environment, attempt to appraise it, and, if possible, suggest means of improvement.

The system of office education depends so entirely upon the ideals of the office, and the quality of the office leadership, that it is almost impossible to discuss it in any but personal terms. It may make or ruin the student's career; it may make slaves of routine, or true masters of their own minds, according as the "boss" is interested principally in his profits, or in his professional family. Education cannot be left to a machine, even the small machine of an architectural office. The *teacher*, be he "boss," or head draughtsman, or fellow-worker, determines by his own character and his own enthusiasm the ideals of his pupils. Is it small wonder, then, that a youth doing his best, making, perhaps, hundreds of ignorant mistakes and seeing his laborious efforts received without sympathy and criticised without understanding—or, worse still, not criticised at all—may grow up into a draughtsman who lives by the clock and uses only the least laborious, most routine methods of holding his job?

On the other hand, put that same youth into a small office with a sympathetic "boss", who has time enough to give his pupil a little real personal attention, and you may make not merely a good draughtsman, but even a true artist and creator. It is the teacher who makes the difference. Unfortunately, such offices are rare, and in these bustling industrial times becoming still rarer. More and more job chasing and supervision take the "boss" away and lessen his personal interest in his employees, and in large offices the direction of the younger and less skilled men—the pupils—is left in the hands of men, themselves employees, who often have neither the wisdom nor the sympathy to give the youngsters the training they deserve. If we believe in this system of office-training, we must see to it that it is more carefully supervised. As it is, it seems doomed, save in very exceptional cases, and produces draughtsmen of limited initiative and usefulness.

The pupils of the evening trade-schools are in a slightly better position. Their instruction is at least systematized and supervised. But its level is not distinguished. Alas, with the salaries these schools pay, how could it be? And too often the aim of the courses is more purely utilitarian than it should be. They train the hands, but the imagination they leave cold; and is it not the main object of education to enkindle that into a hot and vital flame? Moreover, the teachers are usually themselves draughtsmen; often, one is tempted to believe, driven to this evening work not so much by the desire to teach as by the insistence of rent bills and grocers' duns. It is rare, indeed, that such a man makes an inspired or inspiring teacher.

It is, therefore, becoming more and more true that the best draughtsmen receive their training from the architectural schools and the *ateliers* of the Society of Beaux Arts Architects. This is itself somewhat of an anomaly. The architectural schools are intended primarily to train architects, not draughtsmen. Their graduates are expected to be draughtsmen, to be sure; but only for a limited period, in order to gain the experience necessary for the opening of their own offices. The future will prove this expectation, I doubt not, a great fallacy, for who would be brave enough in these days of rush and efficiency to foretell a new era of one or two man offices? The signs point the other way, and the draughtsman must look forward at most to eventual participation in a large firm as his reward and not to the absolute headship of his own office. But that is another question.

The product of this anomalous condition, the young graduate architect-draughtsman, usually finds much food for thought in his education; finds much to blame and much to praise. At first, the shock of the contrast between the free *camaraderie* and enthusiasm of his school and the routine nine-to-five "pencil pushing" that usually awaits him at the start of his office career staggers him. His sense of proportion gets deranged. He feels that he has not been, or is not, treated fairly, has not been warned. . . . His knowledge, acquired by hard work for four years—hard work and lots of fun, hard work that is the very antithesis of routine—seems so foreign to his present environment that a lot of it appears almost useless.

A little later, when the bitterness of the contrast has been somewhat mitigated, the draughtsman's real knowledge, like any real knowledge, begins to count. The school graduate begins to see that his cautiously suggested ideas are sometimes accepted. He sees that the artistic primacy in most of the offices is held by school men. If he has kept his eyes and mind open during his course, he must have acquired a working knowledge of architectural bibliography that becomes more and more useful to him and to the office. Above all, he is not afraid to *think*. He is not afraid to attack any problem he is given, for the school has given him at least a foundation on which he can build in doing any sort of problem, be it engineering or design. But more valuable than anything else he is likely to find his training in these things: imagination, taste, and architectural history.

At first the leap from the colossal subject of his thesis, or his last *projet*, to the cottage or barn or doorway he gets to draw up in the office is overwhelming. Later, the subjects of his *projets* slip into the back of his memory, and are finally forgotten; but because of them he has acquired the ability of analyzing any problem into its elements and evaluating them, and working accordingly. And some of

the wild coloring of his last *projet* has sunk into his soul, and his imagination uses a bit of its glow even when he is detailing a window muntin.

A real knowledge of past building is not only an intellectual but an emotional stimulus as well. It makes the draughtsman feel at home in his work. It is almost like giving him a great number of noble friends for his comfort and inspiration. Love of, and admiration for, the beautiful monuments of past times emotionalize and vitalize the present task. The draughtsman need never lack vital inspiration if he can be made to see that even the most routine detail of his work is necessary for the construction of some building to-day, which, however humble, attempts the realization of some of the repose and beauty and spiritual content of the great buildings he has studied and learned to love.

There is another result of good teaching of art history that is important. A good teacher of art history cannot fail to impress upon his students how intimately the history of art and the history of the race are connected; how every great change in style is only a symptom of some great change in ways of thinking and living. The history of architecture ought to teach that life and art are one, and that falseness of ideal is mirrored inevitably by a fake architecture. It ought to go far toward removing that destructive view-point of the present day, that sees architecture as something very far off and esoteric and unimportant, instead of the very stuff of our contemporary civilization. It ought, in a word, to open the draughtsman's eyes to the social implications and the social responsibilities of his art.

The architectural graduate, then, after a few years of draughting, realizes the deep gratitude he owes his school for all these things—for the ability to think in terms of his art, for the trained imagination, for the background of inspiration, for the fine fellowship of past greatness. He is grateful, too, though in a less whole-hearted way, for the *atmosphere* of the school. He is less sure of his ground here because he has come to see that a portion at least of the atmosphere of some *ateliers* and schools is forced and not real. For all that is real he has only the deepest gratitude. When a crowd of young people are together for four years in such an intimacy of hard work and enthusiasm, the growth of a real *camaraderie* is inevitable, for the common interest in beauty is one of the strongest possible bonds, and one of the most inspiring. But the draughtsman wonders why, if such an inspiriting atmosphere is inevitable, any additional elements need be forced into it. He has come to realize that New York or Chicago or San Francisco is not Paris, and that Latin moral ideals cannot be grafted overnight onto American youth without some irreparable loss of fine sensitiveness, if nothing worse.

Opinion on other questions of criticism is more divided. This division of opinion is in itself a criticism; it shows, at least, that no one school is flexible enough to furnish every one with what he thinks he most needs. That, however, could hardly be expected. In general, there are a few criticisms that seem applicable in nearly all cases.

One of the most important of these is connected with the whole theory of design training. The schools, realizing that drawing is the most important of the draughtsman's duties, seem to concentrate overmuch upon it. The draughtsman frequently gets little appreciation of the third dimension. Plans are considered, it seems to him, too much as abstract patterns, too little as living diagrams in which every spot has a definite, functional, structural purpose in an imagined building. Cleverness of indication is allowed to take the place of real knowledge and mastery of form; clever rendering sometimes hides lack of taste.

The draughtsman wonders why it would not be possible to co-ordinate his design-training with other necessary courses. One of these might be a course in architectural criticism, in which the basic principles of composition and detail could be learned by their application to actual modern buildings near by. Another, still more important, might be a course in the artistic use of materials, illustrated again by actual buildings rather than by mere samples, and including visits to stone-yards, lumber-mills, and the like, so that the student might really understand the methods of manufacture. This course should be combined with some instruction in modelling, so that the draughtsman might the more easily visualize his drawings and specifications, and so gain a fundamental feeling for materials, their texture, color, and proper use. This is the more important for the reason that unless the draughtsman gets this knowledge of the material craftsmanship of architecture in school, or unless he has a particularly sure innate personal feeling for it, Heaven knows there's small likelihood of his getting it in an office draughting-room!

Another criticism arises from the fact that the draughtsman is likely to feel that the curriculum of his school is loosely organized and fragmentary. The architectural school of the present day is forced to teach such an infinite variety of subjects that it is small wonder that sometimes they seem disconnected. Yet the draughtsman wonders if the lack of apparent connection is absolutely unavoidable. Would it not be possible to arrange a course so that at any one time all the major subjects should emphasize one main idea? Could not each design problem the student takes be related in style to the period he is studying in history? Could not the design problems themselves be used to illustrate points in theory, and could not they be used to furnish the ornament to be modelled or drawn, or the engineering problems to be solved? Suppose, for instance, that no final examination in architectural engineering were required, but instead a detailed study and presentation of the most important structural members of his own thesis design? Would not the glamour of the design-training then, instead of taking the student's time and interest from his other courses, irradiate them as well? Perhaps all this is impossible, but the draughtsman wonders if it has been attempted.

More than all else, however, the draughtsman wonders why there is such a scarcity of real courses in professional practice. There are so many matters of vital interest connected with it that it seems a shame it is so neglected. Such a course would serve a double purpose: it would lessen the bitterness of the break between school enthusiasms and office routine, and it would set the minds of an increasing number of young men going busily on all the important related questions. Such a course should cover subjects like professional ethics, legal status of the architect, methods of office organization, with perhaps an inquiry into questions of profit-sharing, etc., the architect's relations to client and contractor, and the architect's place in the community.

Such, then, are some of the thoughts of a graduate-draughtsman with regard to his education. More and more he realizes his debts to his school and its training. More and more he becomes conscious of the tremendous importance of the influence the schools exert upon the architecture of the country. And more and more he wants to see the schools take their places as the strongest possible stimuli toward the humanizing, the socializing, and the idealizing of the profession in even a greater degree than at the present time. Theirs is an opportunity big with promise.

OLD DOORWAY IN SOUTH 4TH STREET.

OLD DOORWAY, FRUIT STREET.

DOORWAY, 5434 MAIN STREET, GERMANTOWN.

DOORWAY, STENTON HOUSE, 1730.

OLD DOORWAYS, PHILADELPHIA, PA.

A Cost System for the Small Architect's Office

By Harry Leslie Walker, M. A. I. A.

MANY of us have often heard a man compliment his architect most highly for his artistic skill, and almost in the same breath severely criticise him for the unbusinesslike methods he uses in the conduct of his work and the affairs of his clients.

A faulty and incomplete understanding on the part of the public as to just what constitutes the proper services of an architect is partially responsible for this condition of mind on the part of the client, but it is also true that in many instances architects are exceedingly careless, impractical, and inexact in their business relations, and seem incapable of realizing the importance of careful and systematic methods in the conduct of their practice.

Architecture is the greatest of all arts and the practice of it the most satisfying of all professions; but to practise architecture one must have clients. The clients of an architect are in most instances business men, men who have by careful, exact, and conservative practice in their business life accumulated the money which they expend in the erection of buildings. They have a right to expect from their architect the same careful use and accounting of the funds intrusted to him that they would from their attorney or any other trusted agent of their affairs. Before he can successfully serve his client an architect must have equal knowledge of, and interest in, the three distinct parts of the practice of his profession, *i. e.*, Design, Construction, and Business Relations. In this classification of his responsibility, the division of Business Relations is, perhaps, the most important of all. If he is weak in his knowledge and practice of the essential principles of accounting, contractual relations, real-estate values, insurance, and similar branches of business experience, it will be but a short time until his clients leave him to a continual and lonely struggle against the reputation of being an artistic but impractical man. No one can successfully conduct the business operations of others if he is careless and unbusinesslike with his own affairs.

One of the first things a man must know in order to conduct any business or practise any profession with satisfaction to himself or to his clients is the cost of producing the article which he sells, be it shoes, automobiles, magazines, or architectural services.

In an office enjoying a large practice there is usually employed a trained bookkeeper capable of developing and keeping up to date a system of accounts covering all of the financial relations of the office. The cost system outlined below is in no sense intended to supplant or take the place of a scientific accounting system such as may be handled by a trained bookkeeper; it is but a simple method which has been developed in an office having a moderate-sized practice, and which has been found accurate and in every way satisfactory for the purpose intended.

Every commission or "job" in the office should be given a serial number; this is essential to the proper handling of records of every sort, and is the principal foundation-stone of any system in an architect's office.

All moneys paid out by the office should invariably be paid by check, the only exception being the Petty Cash Account, and even this account should be kept supplied by means of a check from the General Account.

Below is given a transcript of the General Account of the office, showing all of the expenses for one month. For the purpose of clearness, the various sums drawn by the Architect for his personal use are omitted. Of course if there are one or more partners the predetermined weekly salary for each of them would show on this account in the same manner as those of the draftsmen and other employees. Where there are no partners in the business there is no particular necessity for fixing upon a weekly salary for the individual architect, as there is no division of profits to be made.

GENERAL ACCOUNT

December, 1918					
Dec.			Dec.		
1	Balance in Bank 12/1/18	$672.23	3	A. B. Building Co., Office Rent	$100.00
	By Cash Job No. 317	324.16	3	N. Y. Tel. Co., Telephone	9.76
	Job No. 326	427.18	3	C. Towel Co., Towel Supply	2.00
	Job No. 299	864.27	3	A. B. Print Co., Blue-Prints	26.14
			7	W. Jones, Office Boy	6.00
			7	M. Williams, Stenographer	20.00
			7	A. Black, Draftsman	30.00
			7	C. Brown, Draftsman	20.00
			7	D. White, Draftsman	12.00
			14	W. Jones, Office Boy	6.00
			14	M. Williams, Stenographer	20.00
			14	A. Black, Draftsman	30.00
			14	C. Brown, Draftsman	20.00
			14	D. White, Draftsman	12.00
			21	W. Jones, Office Boy	6.00
			21	M. Williams, Stenographer	20.00
			21	A. Black, Draftsman	30.00
			21	C. Brown, Draftsman	20.00
			21	D. White, Draftsman	12.00
			28	W. Jones, Office Boy	6.00
			28	M. Williams, Stenographer	20.00
			28	Petty Cash Drawer	10.00
			28	A. Black, Draftsman	30.00
			28	C. Brown, Draftsman	20.00
			28	D. White, Draftsman	12.00
			30	"Architecture" Subscription	5.00
			30	A. Photographic Co., Photos Job No. 299	18.60
	Total receipts	$2,287.84		Total expenditures	$523.50
				Balance in Bank 1/1/1919	1,764.34
					$2,287.84

The Petty Cash Account for this same month would be as follows, it being noted that this account is kept supplied from time to time with cash drawn from the General Account.

PETTY CASH ACCOUNT

December, 1918					
Dec.			Dec.		
1	Balance from November	$ 3.26	3	Car-fare Job No. 326	$ 0.10
28	Cash	10.00	6	Telegram Job No. 327	.50
			10	Car-fare Job No. 326	.10
			10	Car-fare	.06
			15	Picture-Framing	2.00
			24	Photographs Job No. 326	6.00
		$13.26			$ 9.30
				Balance forward to January	3.96
					$13.26

Every person in the office, including the Architect himself and excluding only the Office Boy and Stenographer, should keep a daily record of his time on a weekly time-card as shown below. To prevent laxity on the part of the men in filling out their cards each night it is well to have the Office Boy charged with the duty of caring for these cards and of seeing that they are properly filled out each evening and turned in at the end of each week. For the purposes of keeping this time record, every day is considered to have seven working hours, Saturday afternoons, holidays, etc., being charged to Miscellaneous on the time-cards. Any night work or overtime is kept on a special time-card and is entered as a special charge against the particular commission being worked on, and the number of hours of

such work is not considered when calculating the proportion of overhead or general expense chargeable to each commission as explained hereafter.

WEEKLY TIME-CARD

Name, A. Black		Week Ending 12/7/1918						No. 54
PROSPECTIVE	JOB	M	T	W	T	F	S	TOTALS
	Misc.		2				3	5
	325	7	5	5		2		19
	326				4		4	8
	328			2				2
A. B. School					3			3
X. Y. Church						5		5
Totals		7	7	7	7	7	7	42

At the end of each month a summary is made of all the time-cards in the office, as shown below.

MONTHLY SUMMARY OF TIME-CARDS

NAME	WEEKLY RATE	HOURLY RATE	MISC.	325	326	327	328	340	A. B. SCHOOL	X. Y. CHURCH	JONES HOUSE	SMITH HOUSE
A. A. Architect			42	4	6	5	3	7	44	31	16	24
A. Black	30.	.71	15	10	43		45	15	30	15		9
C. Brown	20.	.47	12		40	64	20	18			21	7
D. White	12.	.28	17	41	25	46	20	19	10	4		
Total, 728			86	55	114	115	88	59	84	50	37	40

The share of the total monthly expense of the office chargeable to each commission worked on during that month is made up of the various items picked out of the General Account, the blue-print bill, the Petty Cash Account, the Monthly Summary of Time-Cards, and of a certain proportion of the Overhead or General Expenses for the month.

The share of Overhead or General Expenses to be charged to any particular commission bears the same relation to the entire amount of General Expenses for the month as the total number of hours charged to this commission as shown on the Monthly Summary of Time-Cards bears to the grand total of all hours for the entire month.

The monthly cost of a commission or prospective piece of work being worked on in the office is divided in three parts, which are ascertained as follows:

First: Multiply each man's hourly salary by the total number of hours which he has spent on the job during the month.

Second: Separate and add to the cost of the job all special expenses that may be directly chargeable to that particular piece of work, such as travelling expenses, car-fare, telegrams, long-distance telephone-calls, blue-prints, special supplies, etc.

Third: Add together all general overhead expenses of the office which can not be separated and charged to any particular job, such as miscellaneous time of salaried men, rent, janitor service, stenographers, office boy, telephone, towel supply, expendable materials and supplies, such as paper, cloth, pencils, paste, etc.

Divide this sum by the total number of hours spent by everybody in the office on all jobs, and multiply this result by the total number of hours spent by everybody in the office on this particular job, and the result is the amount of General Expenses or Overhead to be charged to this particular job for this month.

The total of the three sums found as indicated above is the cost to the office of this particular commission for this particular month.

An example of how this works is given below, the items being picked out of the General Account, the Petty Cash Account, the monthly blue-print bill, the Monthly Summary of Time-Cards, etc., and include all items of expenditure which cannot be directly charged to any particular commission or prospective commission being worked on in the office during the month.

OVERHEAD OR GENERAL EXPENSES FOR MONTH

Office Rent	$100.
Telephone	9.76
Towel Supply	2.
Office Boy's Salary	24.
Stenographer's Salary	80.
Miscellaneous Blue-Prints	1.36
Subscription to "Architecture"	5.
Car-Fare	.60
Picture-Framing	2.
A. Black, Miscellaneous Time, 15 hours @ .71	10.65
C. Brown, " " 12 hours @ .47	5.64
D. White, " " 17 hours @ .28	4.76
	$245.77

Following the procedure outlined above, the cost for Job No. 326 would show for this month as follows:

Dec.		
	A. Black, 43 hours @ .71	$ 30.53
	C. Brown, 40 hours @ .47	18.80
	D. White, 25 hours @ .28	7.
3	Car-Fare	.10
10	Car-Fare	.10
24	Photographs	6.
	Blue-Prints	6.18
	General Expenses, 114/728 of $245.77	38.48
		$107.19

The monthly cost of the A. B. School, a prospective commission, would be as follows:

	Dec.
A. Black, 30 hours @ .71	$21.30
D. White, 10 hours @ .28	2.80
General Expenses, 84/728 of $245.77	17.37
	$41.47

All of the above may seem trite and elemental to some men who are habitually systematic and methodical in conducting the affairs of their office, but I trust that it may prove of some assistance to those who have found themselves uncertain as to the real cost of producing any particular piece of work. Architects temporarily associated on some particular building sometimes seriously differ as to the division of profits, and this difference of opinion usually arises over the question as to what is the real cost of doing the work in each office. In obtaining a fair settlement with a particularly recalcitrant client, it is sometimes essential for the architect to be able to demonstrate beyond doubt what has been the actual cost of producing the work. It is becoming customary for architects to base their fees on the cost of doing the work plus a lump sum for their own personal time, and, of course, such an agreement with a client is absolutely impossible unless the real cost is plainly demonstrable.

House of W. V. Lawrence

THE residence of Mr. W. V. Lawrence, in modernized Tudor style, was completed in April, 1918, on a site of ten acres of partly wooded land about one mile from Bronxville station. The house crowns the top of one of Westchester's highest hills, overlooking the golf-links of Lawrence Park and commanding views of surrounding country between Yonkers and the Harlem railroad.

The construction of the house consists of 8-inch exterior walls of Fisklock tapestry brick of a deep red in color with wide sunken joints of darkly colored mortar. The trimmings of exterior, loggia columns, etc., are of artificial stone stained to imitate weathered stone. The interior walls are of hollow block, floors are of reinforced cement and block so that the building is practically fireproof. The roofs are laid up of hand-quarried slate from Vermont, of irregular sizes, starting with 10-inch courses at eaves and ranging up to 5 inches at ridges. The valleys are fumed and represent curved surfaces and so avoiding sharp angles.

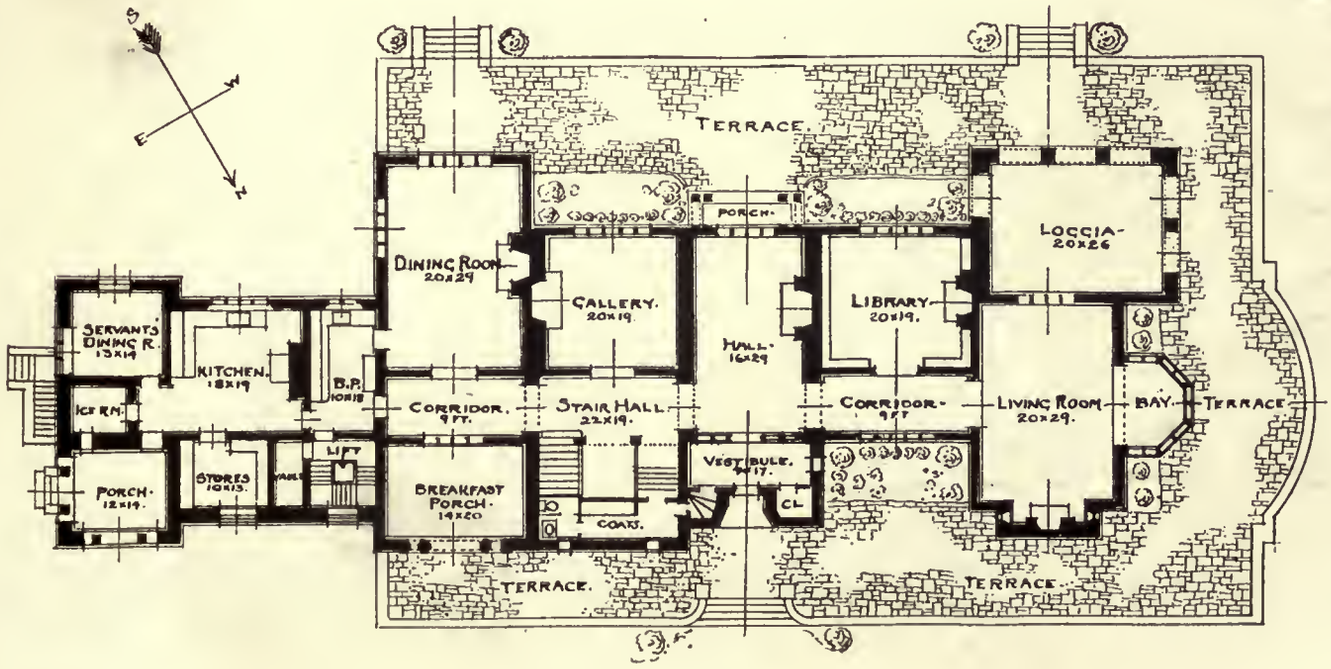
Loggia.

The kitchen wing, finished in stone ashlar on first story and timber and stucco for second story and gables, gives a variety to the grouping. The terrace floor is laid in irregular stone slabs with wide joints filled with earth so that grass may grow between stones. The windows throughout have cement sash set with leaded glass.

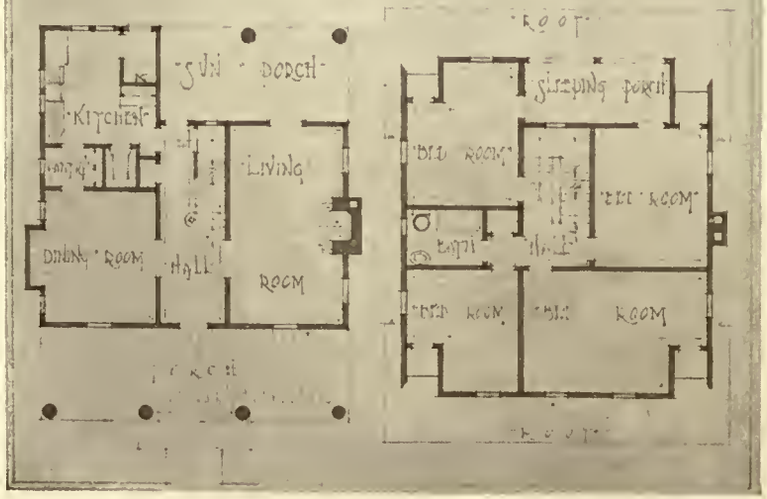
The plan follows the English type in that the main rooms open on corridors and do not communicate en suite, thereby giving each room privacy.

The house is so placed that the corridors face to north and all living-rooms south, consequently each room has sunlight in abundance. The service quarters of house are unusually generous in size and number of rooms, and special attention has been paid to sanitary requirements, all plumbing being of white enamelled ware. The floors and walls of the first floor of kitchen-wing are laid up with white glazed tile.

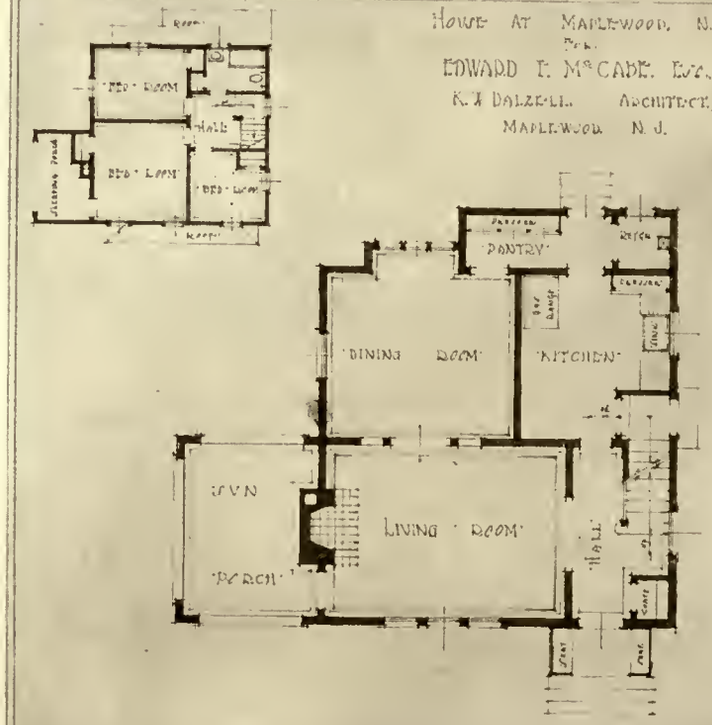
An elaborate plan has been laid out by the architects for the grounds, which are very rolling and in parts wooded with the fine old oaks of Westchester County. Provision has been made in the landscape scheme for garden, drives, summer-houses, garage, and gardener's cottage now built. The grounds, owing to war conditions, have been delayed in their completion, but in time will have the setting which a house of this style commands. The oak forest and golf-links have already added interest in making a typically English place of a modern residence in a New York suburb.

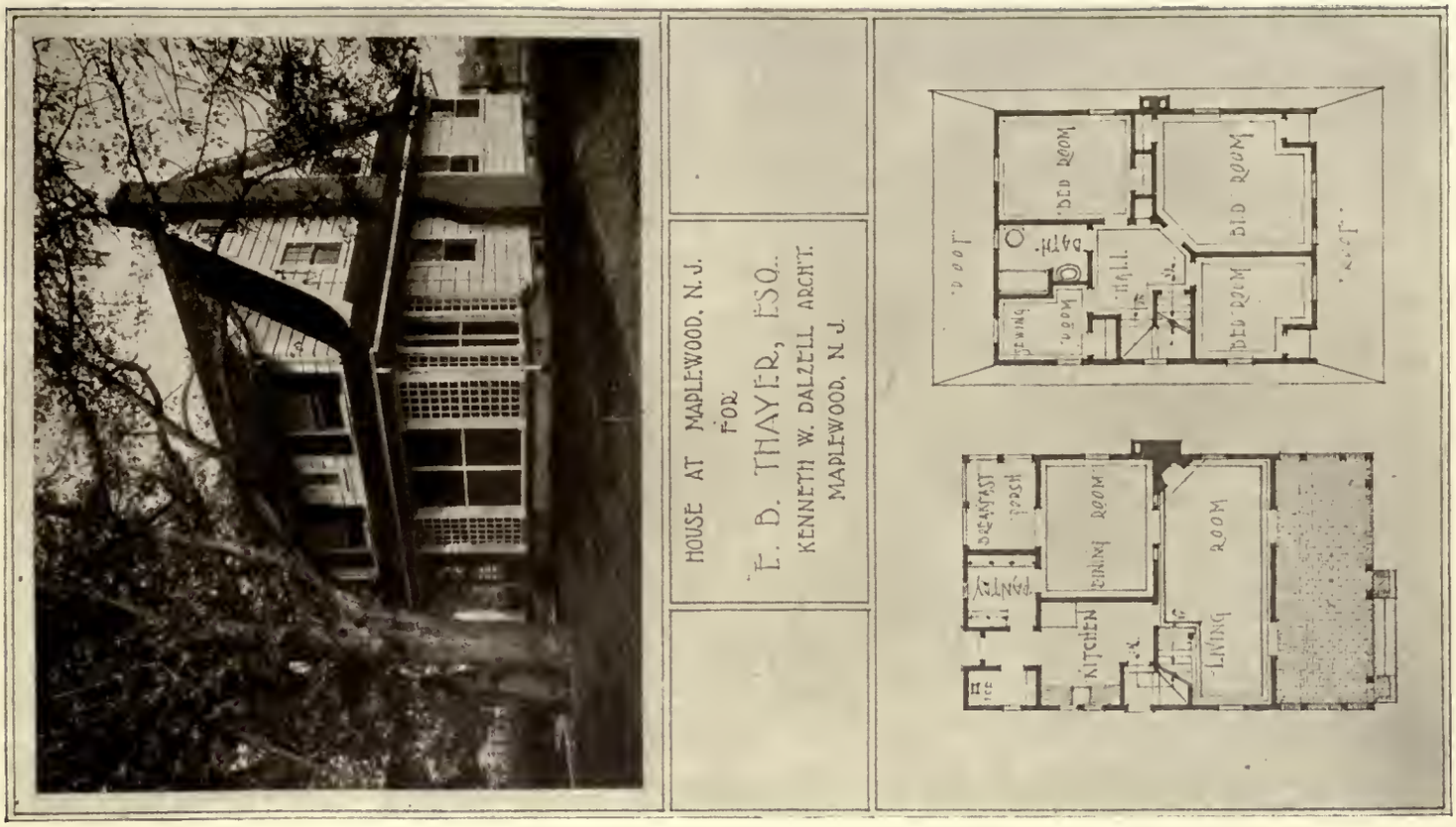


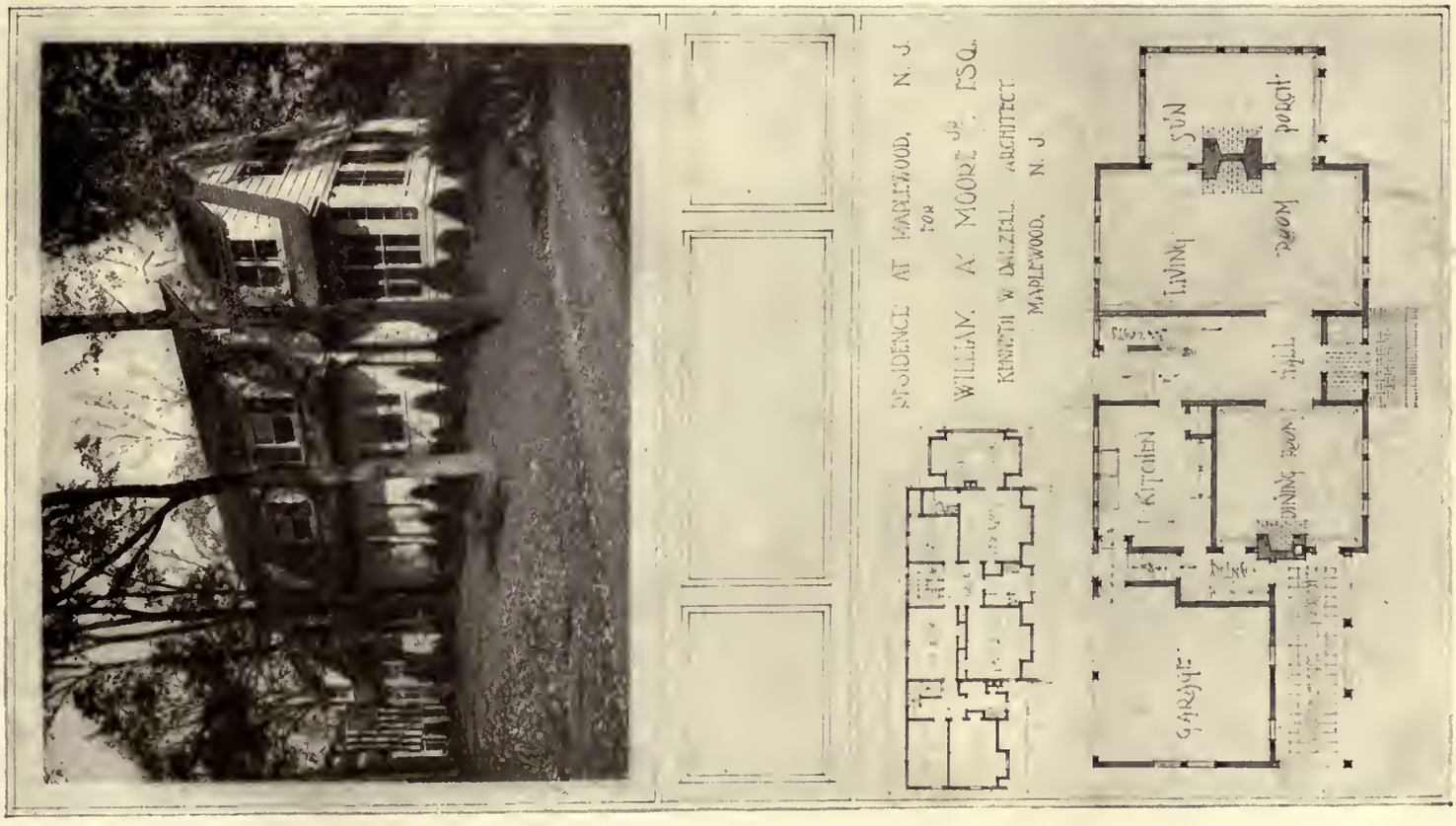
RESIDENCE AT MAPLEWOOD, N.J.
FOR
CHARLES E. PRIEST, ESQ.
KENNETH W. DALZELL, ARCHT.
MAPLEWOOD, N. J.



HOUSE AT MAPLEWOOD, N. J.
FOR
EDWARD E. McCABE, ESQ.
K. W. DALZELL ARCHITECT
MAPLEWOOD N. J.




HOUSE AT MAPLEWOOD, N.J.
FOR
E. B. THAYER, ESQ.
KENNETH W. DALZELL ARCHT.
MAPLEWOOD, N.J.
BED ROOM
BED ROOM
BED ROOM
HALL
BATH
SEWING ROOM
ROOF
ROOF
KITCHEN
PANTRY
BREAKFAST NOOK
DINING ROOM
LIVING ROOM


RESIDENCE AT MAPLEWOOD, N. J.
FOR
WILLIAM A. MOORE JR. ESQ.
KENNETH W. DALZELL ARCHITECT
MAPLEWOOD, N. J.
SUN PORCH
LIVING ROOM
DINING ROOM
HALL
KITCHEN
GARAGE

Italy Will Take Large Quantities of American Lumber

ONE of the principal markets for American lumber will be found in Italy, according to a special cable to the Italian American News Bureau. Reconstruction work in the recently invaded territory to the northeast of Venice is already making large demands for building material, and plans for building projects contemplate the expenditure of millions of lire by the Italian Government.

Import demands on the part of Italy, according to Charles T. Henderson, director of the Italian American Bureau, already indicate that anywhere from six to eight billion board feet of all kinds of lumber and timber will be needed within the first year of peace.

Of course Italy's forests will help to contribute a share of this product, but anywhere from two to three billion feet will have to come from the outside. Fully 50 per cent of the Italian forest supply has been cut out. The authorities are now bending their effort toward saving olive, mulberry, and fruit trees, and a decree has been promulgated forbidding the cutting of them.

Director Henderson has been asked by the Italian Government to make inquiry as to the possibilities in the United States for supplying the demand for building materials which the cessation of hostilities had brought about.

The lumber industry in Italy was given a new impetus when Italy entered the war. Temporary barracks for the soldiers and dwellings for the refugee civilian population were erected, as well as quickly constructed shelters for provisions and munitions.

Italy is not rich in forests except in the mountainous regions in the north, bordering Switzerland. In 1877 the state took in hand the forestry of the country, and made certain laws regarding the planting of trees and the cutting of them. The temporary buildings for war purposes required great quantities of lumber; hence the situation the country now finds itself in.

Much of the lumber needed undoubtedly will be sent from the United States, the varieties in demand being spruce, hemlock, southern pine, and redwood. The demand will depend largely upon the price asked, however, for in normal times lumber is not an essential for building purposes in Italy.

Not only is there a surplus of labor in Italy but the country is rich in clay for brick and tile, and in building stone of various kinds—limestone, lime, and cement. Because of the scarcity of lumber which has existed for centuries, a minimum amount of lumber has been used, buildings and houses having been constructed at a comparatively low cost from stone, brick, and other materials.

The stone is used for foundations, for walls, and for partitions, and when obtainable in suitable shapes and sizes it is even used to finish door and window openings and to top walls.

In Italian buildings the horizontal partitions are made by placing light iron beams in rows and laying on them flat arch hollow tiles. The roofs are generally flat and tiled. In the agricultural districts the barns usually are attached to the houses and of the same material, the floors being of earth or stone, the mangers and racks of stone slabs set in iron frames. Unthreshed grain is stacked in the open.

Announcements

Mr. Albert H. Dow, Mr. Hamilton Harlow, and Mr. Kenneth C. Kimball announce that they have formed a partnership with the name of Dow, Harlow & Kimball, Architects and Engineers, with offices at 101 Tremont Street, Boston. Mr. Dow has designed many prominent public buildings in New Hampshire and Massachusetts, including the Carroll County Court House and the Rockingham County Administration Building. Mr. Harlow is a well-known young Boston architect, and a graduate of Technology. Mr. Kimball is an engineer, and a well-known Dartmouth man.

The firm of Wallis and Goodwillie has been dissolved by mutual agreement.

Frank E. Wallis announces that he has taken into partnership Richard P. Wallis, graduate of the Massachusetts Institute of Technology, 1912, who has been engaged in engineering work in Albany, Cleveland, Minneapolis, and in the U. S. War Department Construction Division.

The firm will henceforth be known as Frank E. Wallis & Son, Architects and Engineers, 56 West 45th Street, New York City.

Mr. E. H. Bennett of Chicago announces the formation of a partnership of Edward H. Bennett and William E. Parsons, as consulting architects.

A. G. Zimmermann, architect, announces the removal of his offices from 10 South La Salle Street, Chicago, to 85 Ninth Avenue, near Sixteenth Street, New York City, January 20, 1919.

Earl W. Porter and Ernest F. Schreiber announce their return from service in the aviation section of the army, and the re-opening of their offices for the practice of architecture under the firm name of Porter & Schreiber, in Rooms 596–598, Brandeis Theater Building, in Omaha, Nebraska. Telephone, Tyler 3176.

The architectural firm of Banigan, Mathers & Thompson, Toronto, announce that those members who were on active and industrial war service have resumed the practice of architecture. The firm announce that they have occupied their new offices, 7 and 9 King Street E., 4th floor.

Book Reviews

IF the life of a nation is reflected in its architecture, the converse is true that the architecture is an index to the life of the people. In an interesting book recently published, "A HISTORY OF EVERYDAY THINGS IN ENGLAND," by Marjorie and C. H. B. Quernell, there are brought together many facts and illustrations of interest to the student of English manners and customs, and to the architect for the comments on the various early buildings. The pen and ink illustrations of certain particular features, such as the interiors of the old English halls and the monasteries, and the tables giving lists of important buildings in "The Norman Period," "The Early English," "The Decorated," "The Perpendicular," have historic interest.

Charles Scribner's Sons, New York; B. T. Batsford, London. 12mo. Cloth. $4.00.

ARCHITECTURAL STYLES FOR COUNTRY HOUSES. The Characteristics and Merits of Various Types of Architecture as Set Forth by Enthusiastic Advocates. Edited by Henry H. Taylor. Robert M. McBride & Co. 4to. Cloth. $2.50 net.

New and enlarged edition of a book designed especially for the direction and assistance of the layman who is planning a country home. It has many illustrations of certain popular types of houses in various parts of the United States.

Convenient Pocket Reference Charts

A WIRING chart for determining the proper wire size for use on circuits of 110–125-volt country-home lighting systems has just been prepared by the Engineering Department, National Lamp Works of General Electric Company. The steady demand for the low voltage (28–32 volts) wiring chart for country homes, distributed in July of last year, shows that the information contained thereon is valuable and conveniently arranged. For this reason, the chart on 110–125-volt systems is designed along the same lines.

As indicated above, the information on the chart for 110–125-volt systems may be used for all voltages within the range. Either chart may be obtained on request from the Engineering Department, National Lamp Works of General Electric Company, Nela Park, Cleveland, Ohio.

In connection with the high and low voltage systems, it should be noted that there is a fundamental difference between the two designations, 28–32-volt lamps and 110–125-volt lamps. In the first instance, a single class of lamps, any one of which is designed to operate on any voltage within the range indicated, is referred to; but, in the latter case, there is a different lamp for each individual voltage between 110 and 125 volts. While the characteristics of all the lamps in this range are such as to allow of their being grouped together for many purposes, as in the wiring chart just prepared, it should be remembered that a 110-volt lamp is to be burned only on a 110-volt circuit; a 115-volt lamp on a 115-volt circuit, or, in general, each lamp only on a circuit of the voltage for which that lamp was designed.

A New Catalogue

"Dixon's Graphite Products" is the title of a new pocket catalogue issued by the Joseph Dixon Crucible Company of Jersey City. While not so complete as the large general catalogue, it furnishes a good idea of the variety of products made by this old concern.

Pages have been devoted to lists of articles especially for mills, railroads, automobiles, etc. The descriptions are brief, but the company will gladly send pamphlets dealing in detail with any of the individual members of the line.

This new catalogue may be had for the asking.

A Building Deficiency of $500,000,000 in Six Eastern States

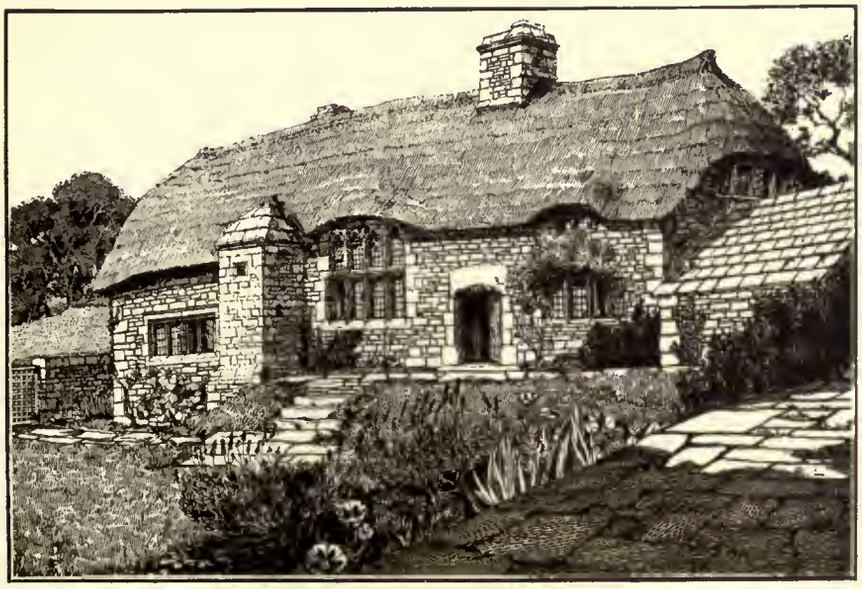
IT will take approximately $500,000,000 expended in buildings in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and New York to make up the building deficiency incident to the war. This construction work must be in addition to the normal, current requirements of 1919.

The Information and Education Service of the U. S. Department of Labor has issued the results of a study of building needs in these six States, made by the Economics Section of the Division of Public Works and Construction Developments. Taking the building permits issued in 1914, 1915 and 1916 to obtain an average representative of the normal year's requirements, and comparing this average with the permits actually issued during the war years of 1917 and 1918, the Information and Education Service establishes the actual reductions in buildings in twenty-one cities.

To obtain an approximation of the building deficiency in the several States, it is assumed that the building deficiency in the State is in the same ratio to those in the cities as the property valuations of the State are to those of the cities.

Nine cities form the basis for the figures in New York State, and from the actual decreases in building activities in these it is estimated that New York's building deficiencies for 1917 and 1918 are not less than $236,000,000. Massachusetts shows up $124,000,000 short, the basis for the computation being actual falling off in the building permits in seven important cities of which Boston is one. Maine, New Hampshire, and Rhode Island show $8,000,000 or more, and Vermont's building deficiency is $4,960,000.

New York City shows a deficiency of $173,192,304, while the figures for Boston are $70,258,082. The normal building activities for 1917–18 in New York, on the basis of building permits issued in 1914–15 and 1916, should have been $318,315,367—they were but $145,123,063. Boston to have approximated normal should have shown building permits totalling $100,898,780 for 1917 and 1918. Its total was but $30,640,698.

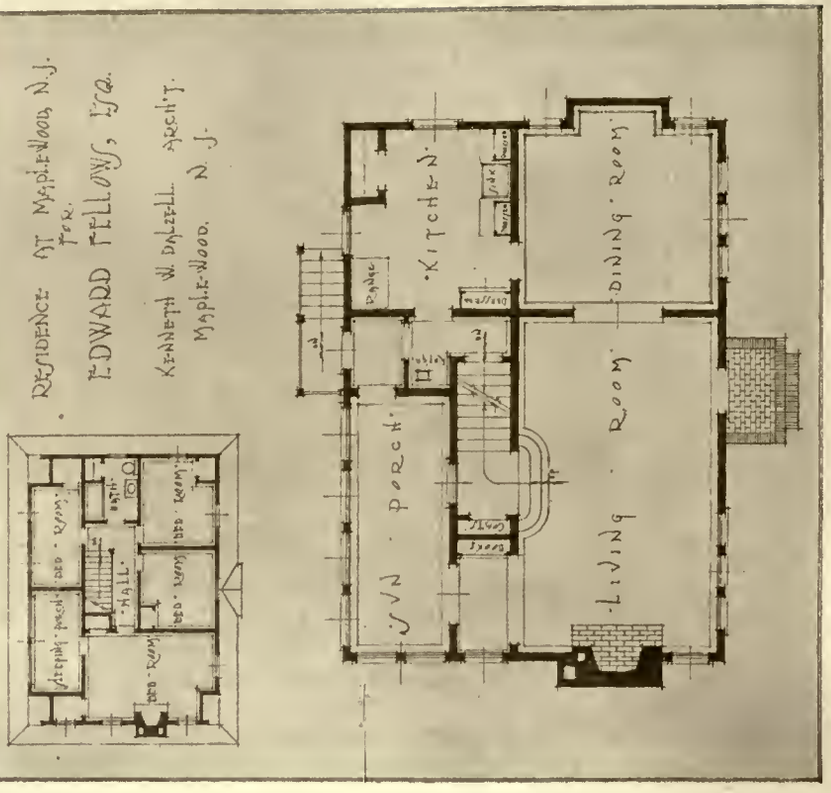


A Cottage in Somersetshire

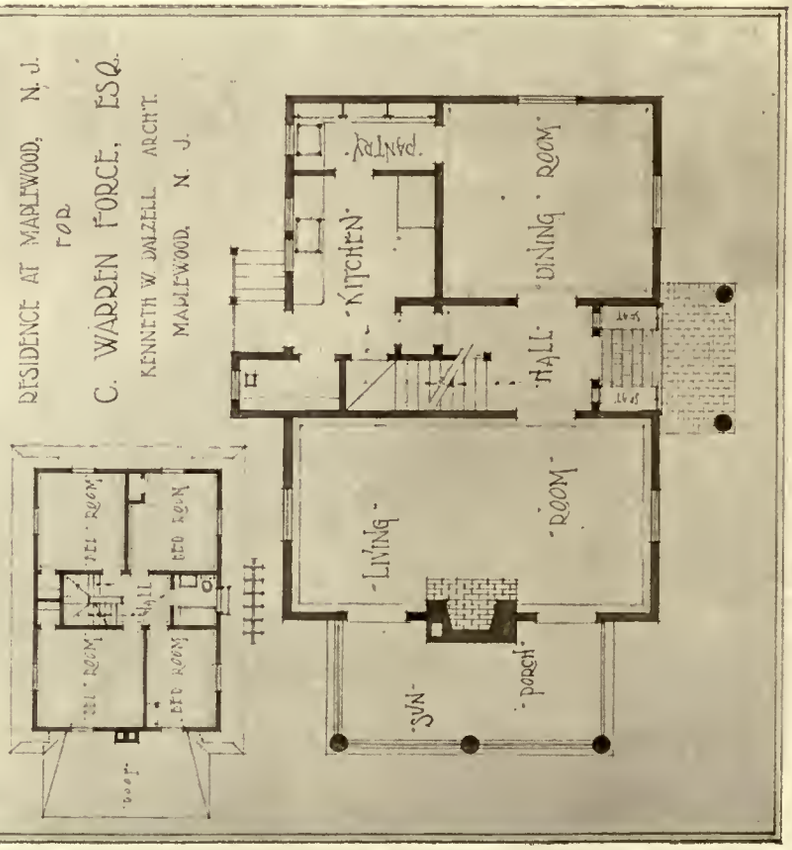
This cottage, being destined for a gentleman and his wife who do their own work, it appeared that a somewhat more architectural treatment was necessary than is usual. The walls are to be of Ham Hill stone and the roof of thatch. A barrel ceiling of Hyrib, cement-plastered, will form the inside of the roof, also affording a fireproof building. The woodwork is oak, touched with color and gilt, and the fireplaces are to be of stone, also the staircase in the projecting bay. The architect is Mr. Philip Tilden.

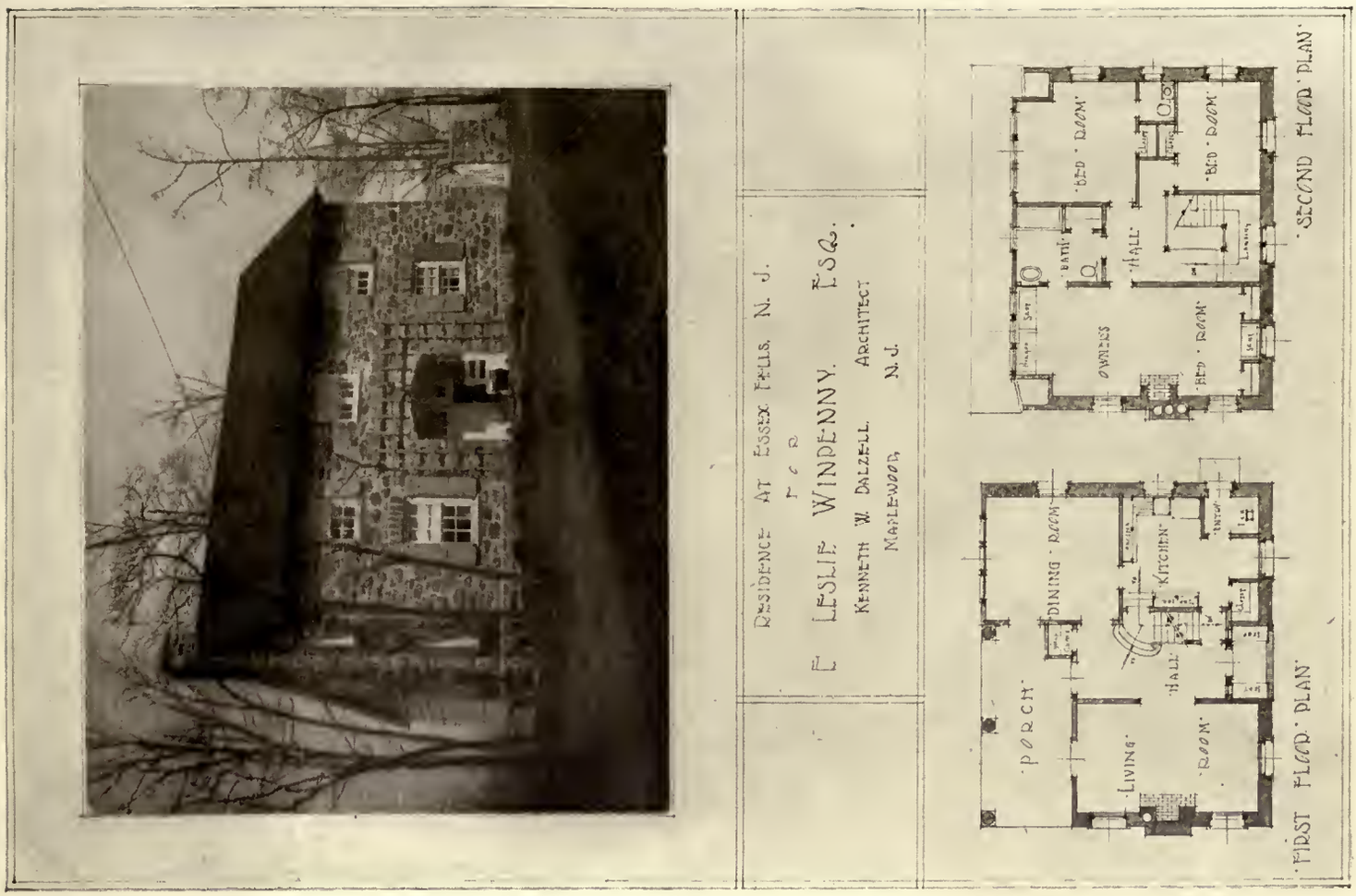
From the Building News, London.

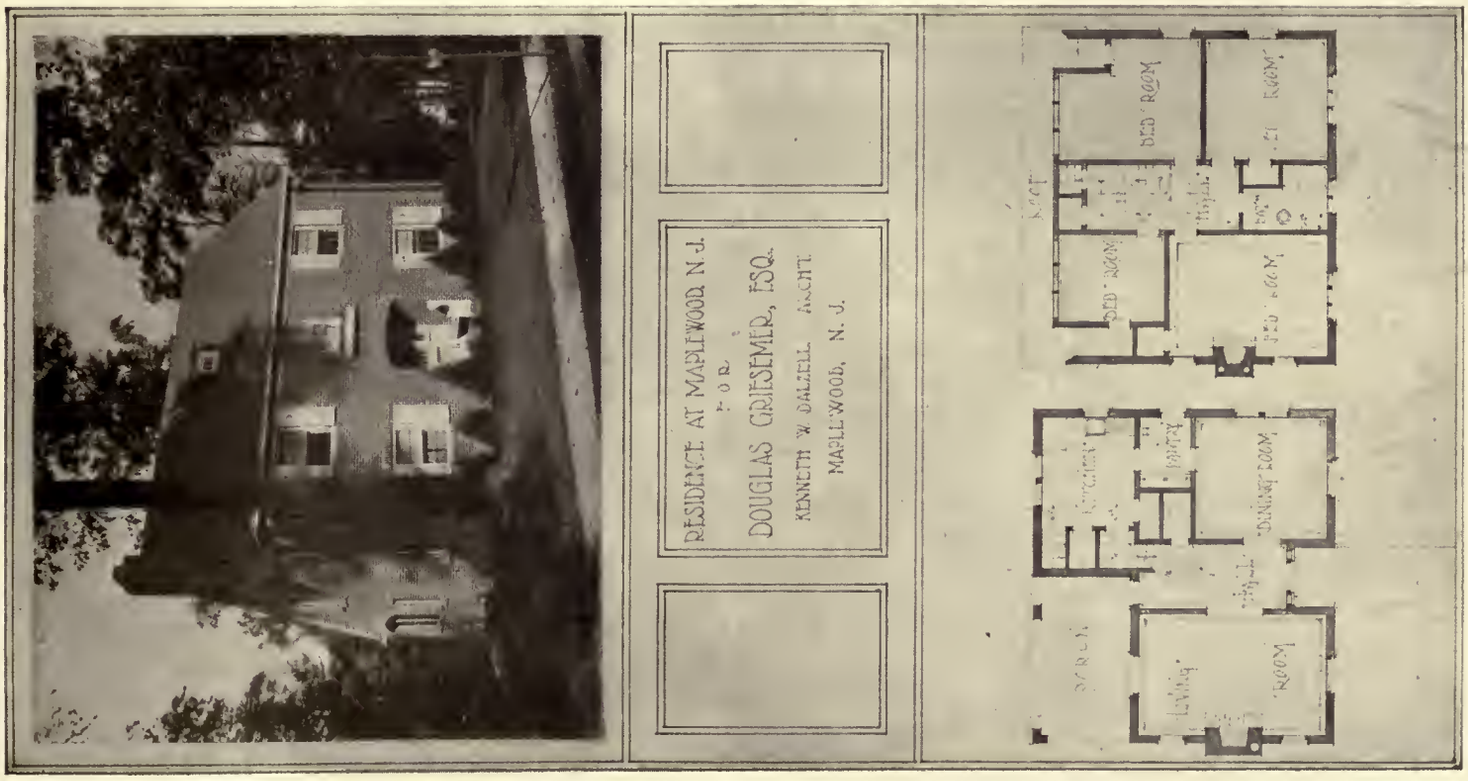
RESIDENCE AT MAPLEWOOD, N.J.
FOR
EDWARD FELLOWS, ESQ.
KENNETH W. DALZELL ARCH'T.
MAPLEWOOD, N. J.



RESIDENCE AT MAPLEWOOD, N. J.
FOR
C. WARREN FORCE, ESQ.
KENNETH W. DALZELL ARCH'T.
MAPLEWOOD, N. J.




RESIDENCE AT ESSEX FELLS, N. J.
FOR
E. LESLIE WINDENNY. ESQ.
KENNETH W. DALZELL. ARCHITECT
MAPLEWOOD, N. J.
PORCH
DINING · ROOM
KITCHEN
HALL
LIVING · ROOM
FIRST FLOOR PLAN
BED · ROOM
BATH
HALL
BED · ROOM
OPEN
BED · ROOM
SECOND FLOOR PLAN


RESIDENCE AT MAPLEWOOD, N. J.
FOR
DOUGLAS GRIESEMER, ESQ.
KENNETH W. DALZELL. ARCHT.
MAPLEWOOD, N. J.
PORCH
LIVING ROOM
DINING ROOM
KITCHEN
BED ROOM
BED ROOM
BED ROOM

Danger Signals for Specification Writers

By David B. Emerson

IN a former article I gave a general outline of the leading requirements in specification writing. In this article I will detail some items which should be embodied in specifications and some which should be avoided, and the general reasons therefor. As I stated in my previous article (February number), what I write is not intended so much for the experienced specification writer as for the younger members of the profession, and although some things may appear very trivial to the older readers, a great many of them were learned through unpleasant personal experiences. In writing a specification for any particular building, the first points to be considered are the local conditions, the materials which can be obtained, the local labor conditions, and the local building code, if the latter exists. For to specify any materials which are unobtainable, or which are prohibited by the code, is liable to raise questions on the part of the contractors and cause considerable trouble for the superintendent on the work.

This, naturally, only applies to buildings which are to be built at a distance from the office, as it is understood that the specification writer, no matter how inexperienced he may be, is reasonably well acquainted with the conditions which prevail in the home town. In calling the reader's attention to the various points in the specifications which may save trouble and worry for the architect, the owner, and all concerned, the writer will take up various parts of the work in much the order in which the specifications would be written.

In concrete work, where any large amount of concrete walls are to be used, always be sure to specify that a sufficient number of expansion joints shall be made, as otherwise serious cracking of the concrete may occur.

Also, in specifying concrete, attention should be paid to specifying the amount of water which is to be used in mixing the concrete, as an excessive amount of water decreases the strength of the concrete; about six gallons of water to a bag of cement being the average amount which should be used. Whenever concrete or cement stucco are to be painted, never specify a paint having linseed-oil as a vehicle, as the alkali in the cement will saponify the oil and the larger part of the paint will be washed off by the first heavy rainfall. The safest method is to specify some reliable and well-tried concrete coating or primer, of which there are many on the market.

In specifying cut stone-work, care should be taken to specify the thickness of all ashlar, four and eight inches for alternate courses being ample and sufficient in ordinary work, but eight and twelve inches should be specified for high-class work. All joints should be specified to be cut back one and one-half inches from the face of the stone. All limestone and marble should be specified to be laid up in mortar composed of an approved brand of non-staining cement, and the backing up brickwork coming in contact with the stone should also be laid up in non-staining cement mortar. All top joints in copings, cornices, pediments, etc., should be specified to be caulked with oakum and pitched or pointed with some approved plastic compound. All anchors, dowels, clamps, and other ironwork used in the securing of stone-work and terra-cotta should be specified to be galvanized, as plain iron is liable to rust and stain the stone or terra-cotta. In very high-class work, where cost does not have to be considered, use copper clamps and dowels in all stone-work.

Wherever structural steel is to be embedded in concrete or brick masonry, do not specify painting the field coat with any paint having linseed-oil as a vehicle, for the same reason as previously stated relative to painting concrete. Specify a paint having a bituminous base, as it is not affected by alkalies and also has excellent qualities as a damp resistant. When specifying pipe railings, never specify galvanized iron pipe or fittings, specify black iron; as galvanizing fills the pores, and paint will not adhere as well to the smooth surface and is liable to peel off.

Most specifications for architectural bronze work are drawn very loosely, often only saying "all bronze work shall be the best statuary bronze," which means very little. To obtain the best results the alloy should always be specified. One of the leading bronze foundries recommends an alloy of not more than 7 per cent tin, not more than 3½ per cent lead, the balance to be pure copper. Also, the finish should always be specified. For high-class work it should be all hand-chased. For cheaper work, statuary finish, which merely consists of removing the fire skin from the castings and filing the bright parts, may be specified. Furthermore, in specifying bronze work, it should be stated that where more than five duplications are wanted, the patterns must be highly chased metal patterns, otherwise the castings will not be clean and sharp.

Wherever wall tile are specified to be set on plastered partitions, the plastering should be done with a one to two Portland cement mortar, deeply scratched to give bond for the mortar in which the tile is set. Always specify metal lath on all stud partitions behind tiling. Interior marble-work should always be specified to be set in plaster of Paris, and all clamps and dowels should be specified to be of copper or brass.

All fragile marbles, like Pavanozza or Sienna, should be specified to be backed up with a hard, cheap marble, to prevent fracture.

All floor sleepers which are to be bedded in cinder fill, and all blocking and other timber which is to be bedded in concrete, should be specified to be treated with a brush coat of an approved creosote wood preservative.

Whenever double flooring is to be laid in a fireproof building, on top of cinder fill never specify tongued and grooved stock for the under flooring; always specify square-edged stock, laid with open joints, for if tongued and grooved stock is used, and the joints are driven up tight, there is no chance for the moisture to escape, consequently a swelling and buckling of the under floor, causing damage to the finished floor.

When copper roofing is to be specified, either flat seam or standing seam, never specify heavier than sixteen-ounce copper, as the expansion and contraction of heavier copper has such a pulling force that it will tear loose. Wherever copper is to be soldered, always specify that the edges of all sheets shall be tinned, as tinning makes a much better holding surface for the solder. In all copper work such as roofs, gutters, leaders, or skylights, always specify that the

contractor shall make proper allowance for expansion and contraction of the metal.

In specifying roofing, either shingle, slate, or tile, always call for all nails to be either galvanized or copper-coated, and in all high-class work specify composition or yellow metal nails for slate or tile, as plain iron nails rust out very rapidly and cause shingles, slate or tile to loosen, thereby causing leaks in the roof.

If frame buildings are to be built at the seashore, always specify that all nails, except those to be used on interior trim, shall be galvanized, as the salt air corrodes plain iron nails and materially shortens the life of the building by allowing water to get to the sheathing and frame and rotting them out.

Wherever wood louvers are used for ventilating the roof space in a building, always specify a moderately fine copper mesh to be nailed directly behind them, as it will effectually prevent the snow from blowing in and damaging the ceilings, and also will keep out birds and insects. Always in all good work, specify that the back of all hardwood trim and wainscoting shall be painted one coat of red lead and boiled linseed-oil, to keep out dampness and to prevent warping and swelling of the wood. All sash should be specified to be glazed at the building, for if they are glazed at the mill and then transported to the building, the putty still being soft, the glass may loosen, and the loose glass will rattle in the wind, making it unpleasant for the occupants of the building, and water will get between the glass and the putty and cause the sash to rot.

All metal sash should be specified to be glazed with a self-hardening putty, composed of whiting, white lead, litharge, and raw linseed-oil, proportioned about 12 to 14 per cent oil, 5 per cent litharge, 78 per cent whiting, and the balance white lead, as ordinary putty will not harden on metal sash. All galvanized sheet metal work should be specified to be thoroughly cleaned with vinegar or acetic acid to remove all grease before painting, which helps to prevent peeling which is so common with galvanized sheet metal work; also, specify to paint the first coat with red lead, into which has been mixed a wax solution, which is made as follows: melt a cup of pure beeswax, and when it has reached a fluid consistency, pour it into a gallon of raw linseed-oil, heated to 200 degrees Fahrenheit. For use add one quart of the wax solution to every one hundred pounds of mixed red-lead paint.

In the writing of plumbing specifications, always, where any fair-sized supply pipe is to be used, and if the local water-supply is taken from a pond, lake, or river, call for a fish-trap to be placed on the supply, on the street side of the metre, to prevent fish, weeds, and other foreign matter from entering the metre. All wrought supply and waste pipe should be specified to be genuine, puddled wrought iron, for although the cost is greater than steel pipe, the very rapid corrosion of steel pipe makes its use a very doubtful economy. Where cost has to be considered, and the sanitary code does not forbid its use, it is allowable to specify standard cast-iron pipe; but wherever pipe is to go under ground, always specify extra heavy. Never specify standard pipe in a building to be built near the seashore, as the salt air corrodes iron very rapidly, and only extra heavy pipe should be specified. If a building is over twelve stories in height, an expansion joint should be called for on the hot-water rising lines.

If it is in any case absolutely necessary to run any wrought-iron pipe in cinder fill, the pipe should always be specified to be coated with neal cement, or some approved preservative compound, for if not protected the pipe is very liable to corrosion, either from the chemical action of the sulphur in the cinders, or to electrolitic action of the carbon in contact with the damp iron. Always specify that the plumber shall install a heavy sheet-lead pan under the floor slabs of all shower-baths, the sides of pan to be carried up at least four inches around all sides and made watertight; unless this is done there is always liable to be leakage at the joints between the floor slab and sides of the shower-stall, with the consequent damage to the ceilings below.

In fireproof buildings the floor slabs under all toilet and bath rooms should be specified to be waterproofed, and all pipes which run through the floor slabs should be specified to have waterproof collars, to be properly connected to the waterproofing over the slabs. This should be done to protect the ceilings below in case of leaks or overflows in the plumbing system.

In writing specifications for gas-piping or electric-wiring in new fireproof buildings, always call for all pipe or conduit to be laid top of floor beams, instead of beneath them, and all cutting to accommodate pipe or conduit shall be done not more than three feet from the ends of the beams, and in no case shall it be more than two inches deep, for in many sections of the country where there are no provisions in the building codes prohibiting it, gas-fitters and electricians will cut out on the lower edge of the beams to accommodate pipe or conduit, which will materially weaken the beam, as the lower fibres of all floor beams are intensive, also the pipe or conduit must be supported by straps to prevent sagging, whereas if laid top of beams it is thoroughly supported by the beams.

One thing which I would call the reader's attention to particularly is the emphasizing in the specifications that wherever patent compounds such as ready-mixed paints, enamels, waterproofings, floor hardeners, etc., are specified, they must always be applied strictly in accordance with the directions of the manufacturers, and that no adulteration of any sort or kind shall be permitted.

When specifying patent preparations of any of the above-mentioned kinds, do not make a practice of specifying new and practically untried materials, for ambitious chemists and manufacturers are bringing out new compounds steadily, giving them a few not overexhaustive laboratory tests and then trying, by means of alluring advertisements and a line of very pretty samples, to persuade the architects to specify the materials, that is, in other words, "to try it on the dog," and the thing for the specification writer to beware of is to avoid being placed in the position of the dog.

BIND YOUR COPIES OF

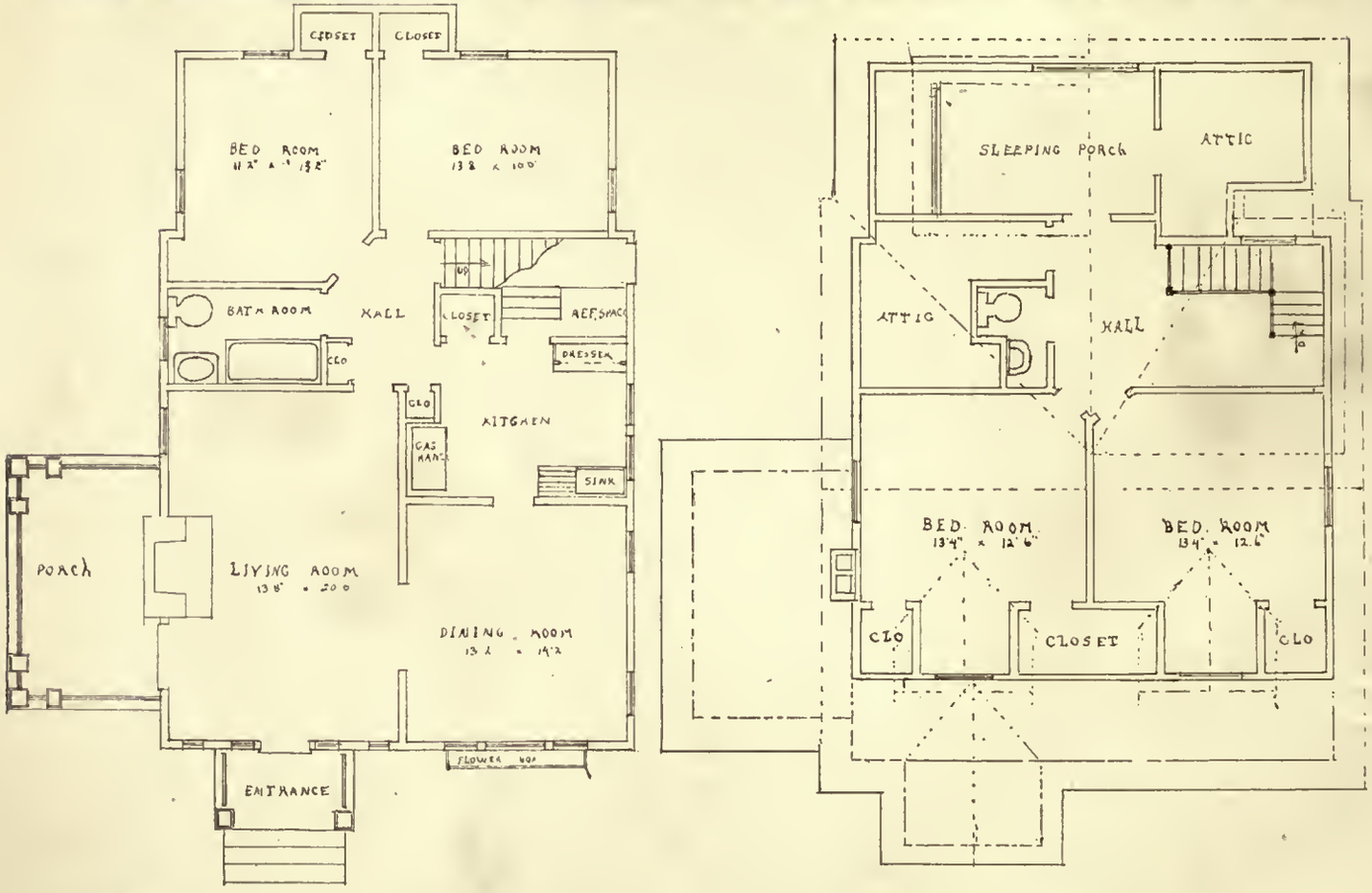
ARCHITECTURE

The Title-Page and Index for Volumes 37 and 38, January to December, 1918, of ARCHITECTURE are now ready and will be mailed without charge to any subscriber upon request.

Address CIRCULATION DEPARTMENT

ARCHITECTURE

597 Fifth Avenue New York City



HOUSE AND PLANS, ARTHUR B. CURTISS, ELIZABETH, N. J. Herman Fritz, Architect.

THE ARCH OF VICTORY, NEW YORK, FROM THE SOUTH.

Thomas Hastings, Architect.

ARCHITECTURE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXIX APRIL, 1919 NO. 4

New York's Arch of Victory

By Thomas Hastings

IN designing the proposed temporary arch in commemoration of the great victory to welcome our returning troops, the first important problem was to know where such an arch should be placed. It seemed evident that Fifth Avenue, unquestionably the most beautiful avenue in New York, with fewer high buildings and better architecture than anywhere else, should be the avenue to be decorated by such a feature. The question then arose in what part of Fifth Avenue to place the arch. Twenty-fourth Street is the only site where it is possible to put an arch, large in scale, where the abutments would be received without interfering with private property. One of the main piers of the arch rests on the little island where the Worth monument stands, and the other in the park itself. In this position the arch becomes the gateway to Fifth Avenue. In its relation to the present Altar of Liberty—which is already associated with such distinguished events as have transpired in New York—there was an opportunity to make an interesting composition, the two being related to each other to produce a real atmosphere of appropriateness and dignity. The thought was to make the arch framework classic in character and most impersonal, to hold in one general ensemble the splendid contributions which were given by the sculptors of New York. The Doric column was selected, and it has been our endeavor while following classic lines with restraint to be modern in spirit, expressing the life and character of these times and the vital events which have taken place. More especially was it the endeavor not to glorify war but to glorify Peace on Earth and Good-Will toward Men. The sculptures portray and tell the story of the events which have already become historic.

The arch is only a temporary Victory Arch. It was constructed in collaboration with twenty-four sculptors under the direction of a distinguished company of citizens, selected by Mr. Rodman Wanamaker for the purpose of welcoming home our soldiers and sailors from overseas. This temporary construction was built without any thought of influencing the final decision as regards the intended permanent memorial, either as to its site, the character of its design, or the selection of its authors.

The beauty of the arch—if there be any beauty—consists more in its actual proportions and in the opening and the picture which it so frames. There is only one arch that I know of—and I have made a careful study in the last few months—which is really symmetrically placed, and that is the "Arc de Triomphe" in Paris. There were six arches built in Rome, the three most important ones in the forum. There never were symmetrical surroundings around them. In the case of the arch of Septimius Severus there were the high bluffs of Capitol Hill with its buildings dominating on one side and a void on the other. These arches are all buried in confusion and none the less beautiful, because it is done with art. This is equally true of the two or three arches in London; the beautiful one in Lille; also Bordeaux, Beaune; and perhaps less so in Nancy, a city which was mostly planned and not evolved.

Mr. Paul W. Bartlett, with the two Piccirilli Brothers, made the sejugis on top of the arch. It shows a chariot with six horses forming a great group, with the crowning figure holding a great flag to illustrate the Triumph of Democracy. This group is colossal in scale. On one side, supported by the main columns, are Herbert Adams's large figures about 12 feet high; on the other side are Daniel C. French's corresponding two figures; these four figures represent Peace and Justice, Power and Wisdom. The spandrels of the two main arches have large allegorical figures modelled by Andrew O'Connor and Isidore Konti. The minor spandrels on the side arches, also containing allegorical figures, are modelled by C. A. Heber, F. M. L. Tonetti, Ulysses Ricci, and Philip Martiny. Aside from all of this work are numerous large panels, some of them approximately 16 feet long and 7 feet high, and others round medallions 7 feet in diameter. These different pictorial subjects were modelled by Mrs. Harry Payne Whitney, Messrs. Shrady, Flanagan, Perry, Beach, Young, Testi, Crenier, and Keck, while the eagles on the main cornice were modelled by Messrs. Roth and Harvey. Mr. Raphael Menconi did the architectural modelling on the arch. Mr. Adolph Weinman, who has given much study to the subject, did the two sphinxes. These pictorial bas-reliefs are high in relief, and some of them illustrate such subjects as the Battle of Ypres, for England; La Marne, for France; Château-Thierry, for America; La Piave, for Italy; Salonika, Palestine, etc. Some of these panels also illustrate the splendid services rendered by the various war organizations for relief, such as the Red Cross, Y. M. C. A., Knights of Columbus, Salvation Army, etc. There is a relief illustrating the ship-builders and what they have done, and also a relief devoted to the munition-makers, etc., etc. The aeroplane service has not been forgotten. In the main attic there is the following inscription:

> ERECTED TO COMMEMORATE THE HOMECOMING OF THE VICTORIOUS ARMY AND NAVY OF THESE UNITED STATES OF AMERICA, AND IN MEMORY OF THOSE WHO HAVE MADE THE SUPREME SACRIFICE FOR THE TRIUMPH OF THE FREE PEOPLES OF THE WORLD AND FOR THE PROMISE OF AN ENDURING PEACE.

The arch is 125 feet long, 40 feet wide, and 100 feet high. A difficult part of the task was to make the arch seem a massive, overtopping structure, despite the fact that in reality it is overtopped by the sky-scrapers which look down upon it from every hand. The design consists of a main central arch with two side arches and a surmounting group representing Democracy or the Triumph of Justice. While it is "not exactly like any other arch," yet it suggests in a way the Roman arch of Constantine which more than any other has been the model for triumphal arches the world over.

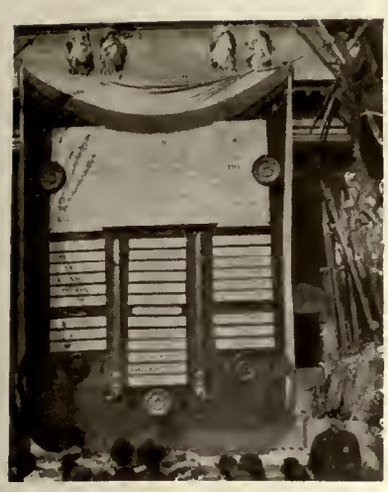
THE EAST END.

THE WEST END.

THE ARCH OF VICTORY FROM THE NORTH, AND THE EAST AND WEST ENDS.

The Decorations of the Avenue of Victory

By Paul Chalfin



The Lincoln inscription at the library.

I REMEMBER a pleasant conversation back in November with Mr. Hastings, when we laughed together over the realization in plaster of some of Piranesi's visions. The arch brought back the smell of these splendid old books and the touch of their fine paper.

Something of this remained in my mind afterward, and when the question of giving a character to the city decorations came up, a ghost from Piranesi's pages had me by the hand. It is not easy to reconcile Roman splendors with Washington Square —nor necessary. It would be positively out of place to bring them face to face with the delicate Louis XVI of the City Hall. But the pomp and richness of the arch almost indicated to me the right medicine for Madison Square; and the library was ready with a little touch of transformation to reconcile itself completely to heavy splendor. I am putting this all down to exonerate the triumph of our troops from having imposed the remnants of Roman grandeur upon my thoughts. The arch itself did that.

The camouflaged stand at 59th Street.

It is impossible not to dream that they should be tramping a way past encumbered splendors to a final temple upon the Capitol, bringing the spoils of Asia, or red-headed savages from Britain, white-skinned Teuton captives, or monkeys and peacocks from Syria.

All along, I have been haunted with the idea that Rome, after all, had achieved a League of Nations and kind of World Peace under the Antonines at that moment which, I believe, historians call "the happiest recorded era of the human race."

These, then, were my elements—Piranesi, Trajan and his race, and their great gift of mankind—the late autumn sunlight of the Roman peace, with its imperial splendor, its purple, its consequence, its great military movement back and forth among benefited peoples; and finally the thought of our own men, singularly returned to us with the little Roman touch upon their helmets of steel, and a little Roman suggestion in their antiquated but most modern arms, their engines of war, their projectiles from the hand, their gas, their armored tanks, all these singularly revived barbarisms so easy to draw together, in a panoply of arms, as if so many battering-rams or Testudos or like the burning oil and the heated stones of Titus and Diocletian.

Out of these elements of thought came the scheme of that strangely impressive purple, which I tried to make the note that indicates no nation, but all nations; no majesty, but the majesty of sacrifice; no imperialism, but that of perfect freedom; no pomp, but that of the high heart. It was not necessary at Washington Square to do more than hang a necklace or two around the lovely creation of McKim, Mead & White. But at Madison Square I have gone deeply into my Piranesi, and borrowed almost literally here and there, with the idea, earlier mentioned, of bringing imperial Rome into the background of our victorious troops. It is mere lap-dog yapping and barking at the feet of the great arch, and licking its face—one might say—with its dodging balloons, its tin spirals, and its gay streamers. I have been happy in seeing this splendid arch loom up with majestic simplicity behind these pylons and assert the culture of the ages beside these trivial improvisations.

It has been intentional that a great *entassement* should appear at this point as a slight reminder of the splendors along the way through the Forum at Rome, and it is by such effects that the Capitol looms up so immensely from the Arch of Septimus Serverus. I was happy to be able to perpetrate a little French *decor* at the Altar to Liberty and to bind a gilded palm upon the column in the finical fine manner of Paul Baudry and Luc Olivier Merson. It was at this point that we set the two sacraments of saluting Allied colors and of placing the triumphant foot upon the virgin sanded way beneath the arch.

These ceremonies went straight to the heart of New York, as if to show how little encouragement people really need to dream and to feel. What could have been worthy of that short cortege, with its great service flag, save the splendor of gold and purple? What ideas comport its majesty with a remote majesty of their own like those of ancient Rome? These trophies piled up with shields from heroic and fallen arms; these spears relinquished by heroic hands; these majestic trees hung with accoutrements of knightly valor according to the great etiquette of chivalry; these simple charges bringing back the naïve beginnings of heraldry; these curtains drawn from a military office and dyed in the purple of majesty—are from Rome. I could see nothing too splendid there, and I could find no jewel to place in the setting rarer than those words of Lincoln: "The solemn pride that must be yours to have laid so costly a sacrifice upon the altar of freedom"—a consolation not

(*Continued on page* 91)

THE ARCH OF VICTORY AT NIGHT.

DECORATIONS IN FRONT OF THE PUBLIC LIBRARY.

accorded the Mother of the Gracchi, and potent to touch even a universe —in sorrow. It was here that, so far as I know, for the first time, outside Washington, the States of the Union have participated altogether in the honoring of an event of a local character, and perhaps also it is first here that the Te Deum has been sung into the open air of America.

To take up the style or the meaning of the camouflage at 59th Street is perhaps superfluous. It suffices to say that the devices here used are absolutely scientific and were executed by men returned from France. The color, too, is in a certain sense a scientific expression—chromatic analysis along the lines of spectral sequence. We meant to make the jewelled arch a great bright bauble, and I believe we have succeeded. But arising as it does in brilliancy, I have wanted to accentuate at the base in the sculptures—alas, too white—the majestic images of the pain that we must forever contemplate, with the lofty and commanding idealism of the heroic women and the heroic men of this war.

The Arch of Jewels, 59th Street, at night.

Then, at the end of the road, at 110th Street, in the most modern part of the town, we have set up a gay and bright toy on a basis of scaffolding, using the very scaffolding structures themselves for decoration and applying our colors and ornaments with profusion.

The Hotel Pennsylvania

FEW problems that present themselves to the architects of to-day make a greater demand upon all of their resources than the construction of a great modern hotel. In the case of the Pennsylvania the problem had many rather exceptional features. Perhaps the largest one was that of providing every conceivable modern convenience, time-saving devices, the meeting of the needs more especially of the multitude of transient travellers that would find an immediately accessible hotel particularly desirable. The Statler service is a well-recognized standard, and their little book of slogans has become almost a part of our national hotel literature. It was to meet the requirements of these established standards and to improve upon them wherever possible, that was the problem of the famous architectural firm of McKim, Mead & White. At the very beginning was the fact that the Pennsylvania was to be the largest hotel in the world. To devise a plan that should meet the requirements of every creature convenience on the inside, and to construct an exterior whose great mass should manifest the purposes of the plan and at the same time be interesting architecturally were also primal considerations.

The building covers the ground space of two hundred by four hundred feet, and rises twenty-two floors from the street level to the roof. The four-storied base, faced with Indiana limestone and relieved by a series of Roman Ionic pilasters, is in harmony with the Pennsylvania station, designed by the same architects. On the Seventh Avenue façade a finely dignified portico of six Ionic columns indicates the main entrance. On the lower floors are most of the public rooms, the street level having the main lobby, office, dining-room, tea-room, men's restaurant, etc. An accompanying plan shows a typical bedroom floor. Two of these floors are divided into special living and reception-rooms, with dining-room, pantry and bedrooms so arranged as to be thrown into suites of from three to ten rooms. There are three floors below the street level, and the hotel has direct connection by a wide passageway under Seventh Avenue with the Long Island Railroad Station, and there is a similar passage that leads to the Pennsylvania Station.

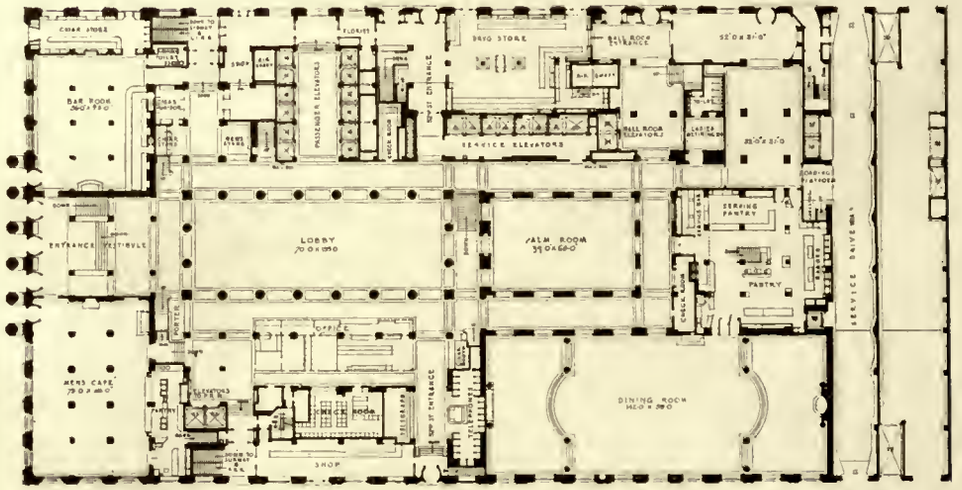
The ground floor creates an impression of abundant space with every detail carefully considered with a view to the proper harmony of color and dignity of form. The motive for the decoration of all of the important public rooms is derived from the Italian classic period. The main lobby contains an impressive colonnade of Doric columns. Above is translucent glass ceiling that diffuses a rich golden light. A mezzanine-gallery here provides a lounging space.

The men's restaurant, to the right of the main entrance, is panelled with a ceiling of natural finished chestnut, and the lighting fixtures are reminiscent of Georgian and Flemish designs. At the east of the main lobby is the tea-room, with decorative motives derived from the very popular Adam period of English decoration. The walls show alternations of arches relieved by mural decorations. The main restaurant is sixty by one hundred and forty feet, with a height of over twenty feet. At each end is a raised terrace, and on the edge of these a screen of four columns adds greatly to the architectural interest. The walls of artificial limestone are relieved with trim of terra-cotta, decorated with Italian arabesques, while the handsomely decorated beamed ceiling shows the influence of the Italian and French Renaissance. The color scheme is quiet and harmonious. The writing-room, opening from the south of the mezzanine, is marked by the characteristics of the English Jacobean period, and is panelled in oak. Here are representations of famous old printers' marks modelled on the ceiling. A grand foyer with parlors on either side leads into the ballroom, with decorations showing the influence of the Italian Renaissance. The ballroom has a ceiling height of thirty feet, and a gallery of boxes extends around three sides of the rooms. The ceiling is vaulted and modelled with Italian arabesque on an ivory-toned ground. On the same floor is the banquet-room, panelled in white oak. The grill-room is a notable relief from the cell-like rooms we have become so accustomed to, with columns in graffito.

The building is impressive by its mere size. The huge wall spaces of brick, relieved by the lighter effect of Indiana limestone, give, in general, an impression of studied reserve and good taste. The impression is one of thoroughness, of organized special knowledge, of adaptation of means to a particular purpose, and this idea pervades the entire structure. The decorations, the arrangement of the spaces, the really marvellous minor details that contribute to the comfort of the guests and the orderly conduct of the business, in other words, the *service* facilities, are notable even in these days when it almost seems as if the limit of hotel construction has been reached.

HOTEL PENNSYLVANIA, NEW YORK.

TYPICAL FLOOR PLAN.



FIRST-FLOOR PLAN.

McKim, Mead & White, Architects.

Country Home, Far Hills, New Jersey

Emilio Levy, Architect

THE yearning of the city man to become a country gentleman seems to be increasing more and more every year. This is undoubtedly due to the longing for the delights of agriculture, pigs and ploughs, plants and trees; things essential to the country gentleman. Perhaps this explains the apparent preference in the selection of inland sites to those near the sea.

The present property is situated near Bernardsville, and enjoys a picturesque view of the Jersey hills. The Dutch farmhouse style of architecture was decided upon to meet the desires of the owner for a country house of the farm type—simple and unpretentious.

Tea-house.

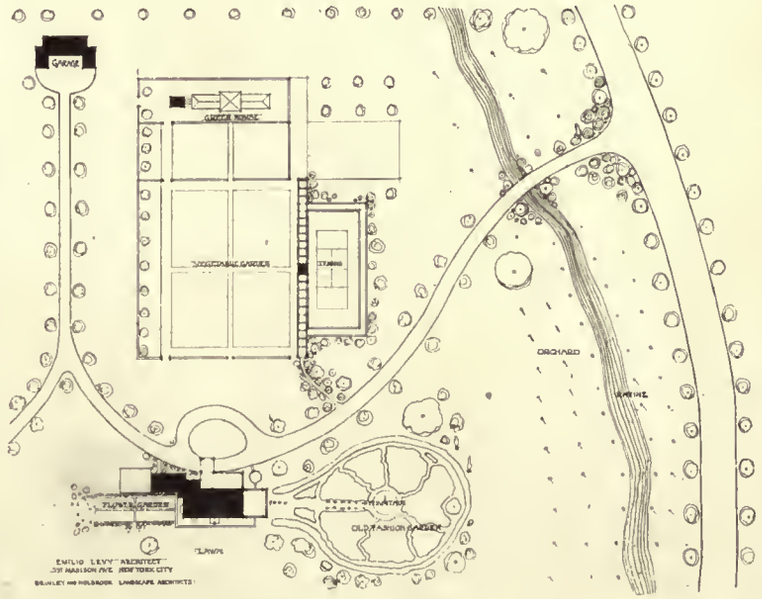
The house was designed to suggest that it had existed for years in the present location. Naturally, the large width of the hand-split shingles, coarse and rough in texture, of the pre-Revolutionary period, were used, and a pleasing innovation was introduced by the doubling of the shingle course, the widths of the exposure to the weather of the shingle being 1 inch and 11 inches respectively.

The highest part of the property, which is at a convenient distance from the main road, was naturally determined upon for the position of the house, thus enabling the owner to enjoy viewing his estate, including the distant group of splendid farm buildings.

An interesting and winding road, bordered with stately trees, leads to the entrance on the north side of the house.

Visitors afoot enter the house on the opposite side, or south side.

The most desirable exposures were allotted to the living-room and main bedrooms. All of the rooms are of ample proportions; hallways have been reduced to the minimum, and it may be said there is no waste room.



All woodwork is painted white excepting living-room, which has oak-panelled walls from floor to ceiling. All floors on main part of the house are quartered sawed oak.

The kitchen and servants' quarters are located in a wing entirely separate from but within easy access to the main house.

From the front on the south side of the house one looks out upon a large and well-cared-for lawn. On this side of the house no trees have as yet been planted.

A very successful and charming old-fashioned garden affords a pleasing view from the large living-room and living-porch, which are on the east end of the house. The dining-room at the west end opens out upon the rose-garden. On the north side of the house the orchard encloses a generous vegetable-garden; to the east is the grape arbor, and an interesting greenhouse is located to the south.

The farm buildings, situated some distance from the house, are reached by a roadway flanked with sentinel-like trees.

The four-car garage follows the general style of the house. The living-quarters are located on the second floor. The "U" shape of the garage is adaptable for future additions. The wings on either side are open and afford sheltered parking for visitors' cars as well as for carriages and horses. Motors are washed in the centre court.

A small running brook skirting the edge of the woods on the west side of the property is being dammed, and a fine swimming-pool will be added to the many attractions of the property.

It is pleasant to add that the same friendly relations between the owner and his architect exist now as before his country house was built.

COUNTRY HOME, FAR HILLS, N. J.

Emilio Levy, Architect.

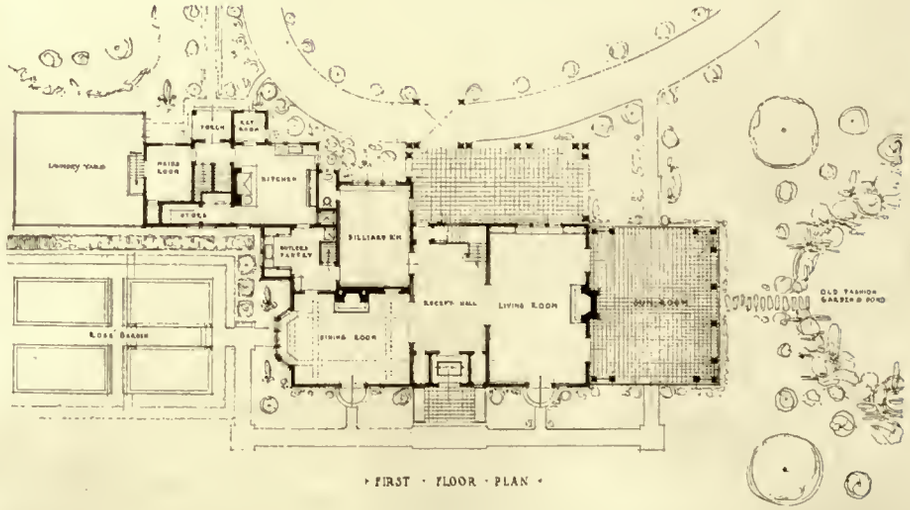
GARAGE.

COTTAGE.

COUNTRY HOME, FAR HILLS, N. J. Emilio Levy, Architect.

MAIN ENTRANCE.

SECOND FLOOR PLAN



FIRST FLOOR PLAN

COUNTRY HOME, FAR HILLS, N. J.

Emilio Levy, Architect.

Superintendence—By a Superintendent

By Enos V. Foulk

ABOUT what happens between taking the drawings off the boards and turning the completed structure over for use—who hears? Ordinarily in an art expression the climax has its place in the scheme, but in the art of architecture the finale—the materialization of the paper architecture into a physical entity of brick and stone and mortar is little discussed, but should be. This purports to be an entering wedge.

An architect, large in heart and vision, when I took my place on his staff and was about to start on my first assignment, said: "You are not going out to be a private detective, but an interpreter and a harmonizer, and to get into the work the character you have found expressed in our drawings." And in a dozen years' experience I found this to be substantially a correct view-point, depending on conditions.

Client, mobilizer of dollars; contractor, majordomo of craftsmen and materials; architect, adviser as to taste and the *practical*. (I hope the government will not throw me into jail for tewnty years for this presumption!) The old triangle, but not of the stage; for, instead of an evil element, all three enter, or should, into a constructive combination, providing three large-minded and honorable men have been brought together.

It is axiomatic, to live men at least, that there is no finality to human thought, so even the combination of "blue prints" and specifications is not the last word. Which is but another way of saying that at the site itself may be revealed the strength or completeness of the architect's presentation of the case, but more frequently the contractor's co-operation or failure, and the client's pleasure or displeasure, as he has been able, or unable, to visualize the "blue prints," and is then able, financially and temperamentally, to adjust to imposed conditions. For also in this form of art, the stone artist cannot change either his composition or its details as readily or with as little cost as the etch artist or the paint artist may change theirs.

Superintendence necessarily varies, depending on the accessibility or remoteness of the structure from headquarters and the staff. Nearness implies the possibility of more frequent visits of the chief to the site, not only for the actual staking out of the building, which has, of course, already been studied on paper, but on through the examination of the footing conditions to the last note in decoration and sometimes furnishings as well. Remoteness brings with it the problem of selection of a resident superintendent, whose general technical knowledge, æsthetic feeling, and administrative power will make for progress, conciliate the client, and harmonize the latter and the builder in the event of friction.

A superintendent may keep headquarters advised of the growth or progress of the work intrusted to his care in three ways, viz.: language, drawings, photographs. Up to a certain point, a weekly report of work done will be found most desirable. This should be separated into the trades working on the structure, narrating just what each has done during the week reported for, and describing all the activities of the week. Such a report shows how alive the job is as a whole and reveals any particular hiatus in any trade. Again, the superintendent can keep headquarters advised weekly, or every second week, as found desirable, through the medium of a sketch plan. Heights that walls have been built can readily be shown by numbering the walls, and on the same sheet, at filing-cabinet size, the built height of walls may be enumerated. This sheet should, of course, show for record purposes that the conditions described exist at the end of a certain date. Photographs taken occasionally, say every second week, reveal general progress in a practical way. These, too, should be dated immediately, preferably on the negative—all as a matter of record. Photos of a special condition have been found a valuable ally for a reconsideration of a treatment which perhaps might be bettered in final treatment. Through these three channels, then, language, drawings, and photographs, the office may visualize progress and possess permanent records showing interest or delinquency on the part of a sub or the builder. Such records are invaluable aids in later settling controversies as to blame for failure to progress.

Nearing the completion of the work it is well to, taking both plans and specifications into consideration, report by trade just what remains to be done at the end of a definite date. This relates to both contract and the inevitable extras. A copy of this could, with good grace, be sent to the builder, not only for record but, in the spirit of co-operation, to remind him of his sins of omission as well as of commission, providing the latter have to be transmuted into correct structure. A record of this kind is invaluable in the issuance of a final certificate. Where the operation is remote from headquarters, a copy of the final report may be left with the owner of a residence or the chairman of a building committee, that it may be utilized as one of the factors in the final settlement of accounts.

My own feeling as to a superintendent's duties has impelled me to always fight, if need be, for the carrying out of a design, in the sense of finish rather than structure. In which I attest to my consciousness that the architect I have represented is essentially an artist, although he has co-operated with an engineer! There, I have used the fatal word.

I might recite without end numerous instances as to details, and how they were received at the site by "My Lady"—of either sex.

A very wonderful brick wall, running in color value from warm reds to reddish yellows. And here and there a scarlet brick. All of which meant the scarlet brick must come out. A long-distance 'phone to the chief to come a hundred miles or more to discuss the raison d'être of *one* brick. And then the charm and pathos of it all! The defense: "If I were to paint a water-color I would get the general value of the wall, and then to give it life would . . ." "But," said My Lady, "this isn't a water-color; this is a house." The scarlet brick, however, remained in the wall.

And the porch which must be redesigned because, forsooth, the hall would be so dark. And the chief's ultimatum that he would consent to the change, but would put up a sign: "This is not my work." And when all was completed "My Lady" put up at least three kinds of draperies at each window to keep the light out of the hall.

And "My Lady" says for the eleventh time, in a discussion of interior details: "But *I* am going to live in this house." And that was the last straw, and I was left alone in my loneliness, for I never saw the chief there again. His interest had been dissipated.

The Hotel Commodore, New York

Warren & Wetmore, Architects

THE notes regarding this remarkable building are aimed to point out certain distinguishing features of plan and the styles employed in the decoration, as explanatory of the illustrations shown in this number.

From the vestibule, at the Forty-second Street entrance, wide stairways on either side lead up to the lobby. The vestibule and stairways are reproductions of an Italian garden. On the street level there is a passage between the stairways giving access to the grill-room and Grand Central Station.

The lobby, the largest hotel lobby in the world, is intended to give the impression of an outdoor courtyard or patio roofed over with glass, and treated in a suitable and direct manner as a background for plants and hangings from the mezzanine. The arches of rough stucco, in soft light color, harmonize with the treatment of the skylight and the dark woodwork—the whole effect being enhanced by indirect lighting coming from concealed sources in the vases on the columns. In plan the lobby floor is so arranged that travel lines do not interfere. The social interests of the hotel—things pleasant and attractive to the ladies—have been kept to the right of the entrance at the east end. Up a few steps is a terrace known as the Palm-room, where after-dinner coffee and afternoon tea are served. Behind this terrace is the main dining-room, and from it stairs lead to the mezzanine, the hair-dressing parlor, and ladies' rooms. The walls of the main dining-room are done in American walnut without mouldings. The ceiling is vaulted and decorated in low relief. The ceiling panels and the piers supporting the vaults are painted in contrast with the dark wood. The lighting scones are utilized as registers.

To the left of the lobby entrance, and occupying the entire west end, are found the business affairs essentially identified with men. They include the offices, stock-brokers' room, check-rooms, men's writing-room, men's restaurant (an early English room), telephones, telegraph, etc.

All around the lobby is a wide comfortable mezzanine lounge reached by a broad stairway at the west end and other smaller stairways at the sides.

The Park Avenue viaduct, which crosses Forty-second Street and passes around the Grand Central Station, gives a unique ballroom entrance to the mezzanine at the west end. Automobiles land guests on the mezzanine, where a short, easy flight of stairs leads to the coat-rooms. Here wraps are removed and the guests ascend to the ball-room floor without coming in contact with regular hotel matters.

It was necessary to plan the ballroom floor to provide for various forms of entertainment (large and small gatherings), banquets, dances, conventions, conferences, and to give the particular type of service peculiar to each. Small ballrooms open into each end of the large room to be used with it or apart from it. A special banquet kitchen takes care of all requirements for dinners without interfering with service in other restaurants. In this way it is possible to serve up to 2,000 seated at one time and to provide linen, silver, and china reserved for the purpose.

The decoration of the large ballroom is not tied to any particular style or period. It was evolved from the form and arrangement of boxes used in the Mexican bull-ring, which allows for a maximum number of boxes on the gallery for sale at charity functions, and free floor space below for banquet-tables or dancing.

When the decoration was assigned to the modeller, he adopted an empire style of ornament which has worked out admirably. There has been much conflicting criticism of this room. The Old Guard Ball gave a brilliant test of its success when the rich gowns of the women and the military uniforms of the men blended with the color scheme of the decoration of black, green, and mauve.

On the roof of the ballroom a summer-garden will be planted for tea and luncheon.

The bedroom floors arranged on the **H** plan are free from the obnoxious inside court bedrooms. In fact, the Commodore's best rooms are on the courts, which are wider than any of the fronting streets. The floors are controlled by clerks at desks placed centrally opposite the elevators. There are 2,000 bedrooms all with baths.

There is a notable room back of the vestibule, the grill-room used for supper and dancing. The entrance is from a higher level, or terrace, having stone walls and columns and a tile floor. The main part of the room is down a few broad steps. Here the walls are in chestnut with alcoves and leaded windows. Large beams in the ceiling are painted in heraldic designs taken from illuminated manuscripts. This is the work of Mr. Smeraldi. The room is decorated in the style of the Swiss Tyrol.

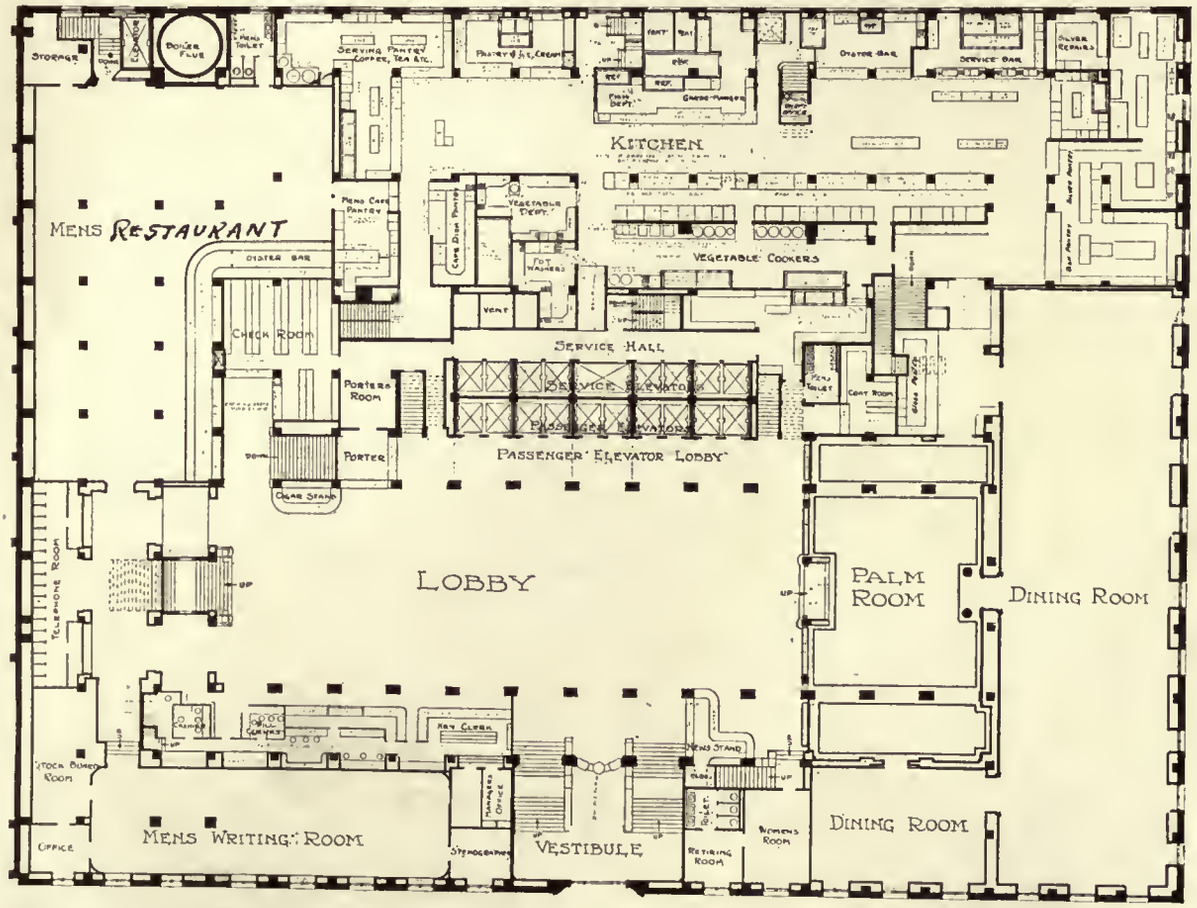
Huge quantities of material had to be used in the construction of the Commodore. For instance, 4,256,000 bricks were required, 1,653,000 terra-cotta partition blocks, 218,900 back-up tile, 1,035,000 square feet of fireproof arches, 63,850 pounds of cement, 10,000 tons of plaster, 412,000 lineal feet of plumbing pipe, 450,000 lineal feet of electric conduit, 1,500,000 lineal feet of electric wire, 245,000 lineal feet of steam-piping, and 10,000 lineal feet of refrigerating pipe.

The area of spaces in the building consists of public space, 91,600; service space, 57,900; bedroom space, 520,000; corridor space, 101,400, and stair space, 2,622 square feet.

There are thirty-three stories, five below the street level and twenty-eight from the street surface. Its steel skeleton weighs approximately 16,000 tons and is built over the great new subway systems.

The Commodore is a community of cliff-dwellers, with each cleft in the cliff a floor of palatial furnishings, of suites and apartments. The hotel is a city of 15,000 souls—many cities are smaller. In the restaurants and grills and dining-rooms, 2,000 of them are eating and chatting and laughing to music. In the ballroom, 3,000 are jazzing to a war melody. In the subway under the hotel, on Lexington Avenue, 200,000 persons ride daily.

DINING-ROOM.



PLAN OF LOBBY FLOOR.

HOTEL COMMODORE, NEW YORK.

Warren & Wetmore, Architects.

LIVING-ROOM MANTEL, GEORGE C. REW RESIDENCE, CORONADO, CAL. Elmer Grey, Architect.

Editorial and Other Comment

Why Wait?

WAITING for something better to turn up has ruined many men who have failed to see the opportunities right at their doors. We have been hearing of building prospects all over the country ready to go ahead with as soon as the cost of building materials goes down. But they are not going down in any degree that will make any appreciable difference in the cost of construction. Possibly prices may be readjusted slowly to a point that will make up the difference in the added high cost of labor. If this becomes a fact there will be no real and sufficient reasons for any further delay in building. The idea that we are going back to pre-war prices is only a dream that will not be realized for many years, if ever in the present generation. Taxes must be met, liberty loans paid and Europe reconstructed. The greater cost of building is but a part of the higher cost of everything. We must train ourselves to forget old ways, old ideas of economy, fixed plans of cost based on the past. The United States Department of Labor says:

"Investigation of contracts on building and construction projects, let in February, 1919, made by the Department of Labor, produced convincing evidence that a majority of the contractors and builders in the country have come to understand the situation. When the contracts let in February of 1913 and 1914 are revised to the basis of present construction prices and these figures are compared with the contracts let in February, 1919, the comparison shows that February, 1919, was better than 90 per cent of normal. Now that the Industrial Board of the Department of Commerce adds its testimony on the futility of delaying business in the hope of availing of pre-war prices, a reasonable expectation is that building and construction work will show a further approximation of normal."

We have noticed a decided tone of optimism in some quarters recently, notably in the Middle West. One of the favorable indications is the widely developed publicity in behalf of the "Own-Your-Own-Home" Campaign. The immediate and insistent need of building in our cities is evident everywhere and there is obviously as great a dearth of homes for dwellers in country and suburbs. There would seem to be relatively only an insignificant question of speculative values even in the building of city apartments. Rents have been established on a new basis and the projectors of a new apartment nowadays will have them filled and have a waiting-list even before the foundations are laid. There are thousands of dollars being lost by waiting for better prices that will probably never be realized.

It is not at all unlikely that we shall shortly see a rush to get in ahead and the beginning of an unprecedented period of general building activity. The widest development will probably be in the construction of homes, and this work will give employment to architects throughout the country. In many offices preparations have already been made to meet this demand, plans and elevations have been drawn and costs carefully estimated on the new basis. Beforehand offices who can show plans and exactly what can be done without prolonged delay are the ones that will get the business.

More About War Memorials

THE bulletin of the Municipal Art Society of New York, just published, is entirely devoted to the subject of war memorials, and it will prove a helpful document in the hands of many committees throughout the country who are contemplating the raising of funds for such a purpose. The possibilities of going wrong, by putting up some monument that in future years will cry out on the highways the bad taste and poor judgment of those whose names may comprise the committee, will be much lessened by a careful reading of such bulletins. There are many illustrations of good things that have been done that no amount of merely descriptive writing could make as effective object-lessons. One page in the back is given to examples of "What Not to Do." No one, we should think, beyond the local tombstone-maker, the designer and cutter of little stone angels and doves and bleeding hearts, will think of putting up the old-time stone soldiers. One of the monuments shown is of a soldier standing at parade-rest on top of a fountain enjoying a sun shower-bath in its spray! The bulletin may be had by addressing the society at 119 East 19th Street, New York.

New York's Victory Arch

WHETHER or not the triumphal arch is to be thought of favorably as one of the most fitting forms for a war memorial, there is little doubt that Mr. Hastings' arch, erected as a temporary structure across Fifth Avenue at Twenty-fourth Street, is in its final results a distinguished success. It is a notable achievement; and while there are many differing opinions concerning details, there seems a pretty general acknowledgment that it is a thing of dignity with ample claims to justify its being called a thing of beauty.

There is nothing under the sun that any artist can create or reconstruct from the historic past that will not receive its full meed of chastening criticism. Mr. Hastings says: "It was built without any thought of influencing the final decision as regards the intended permanent memorial, either as to its site, the character of its design, or the selection of sculptors." We believe our illustrations of the arch will have interest for many architects who may not have had the privilege of seeing it in place, and we are showing also some photographs of the decorations at particular points along the avenue of victory, whose significance and purpose are told of by Mr. Chalfin, the designer of the decorations.

Prizes at the Spring Exhibition of the National Academy

THE National Academy announces the following prize winners in the Spring Exhibition. The Altman prize of $1,000, the chief prize of the exhibition, goes to E. W. Redfield for "The Old Mill." The second Altman prize, of $500, goes to Gardner Symons for his "Shimmering Tree Shadows."

Thomas B. Clark prize of $300 for the best American figure composition painted in the United States by an Amer-

ican citizen, without limitation of age, to Jerome Myers for his painting called "Evening."

Julius Hallgarten prizes, $300, $200, and $100, for three pictures in oil-colors, painted in the United States by American citizens under thirty-five years of age, to: first, Robert Strong Woodward for "Between Setting Sun and Rising Moon"; second, to Ercole Cartotto for a portrait of Miss Marion Ryder; third, to Dines Carlsen for a still life, "The Jade Bowl."

Isaac N. Maynard prize, $100, for the best portrait in the exhibition, to Irving R. Wiles for a portrait entered as "The Little Green Hat."

Saltus medal for merit, presented by J. Sanford Saltus, to be awarded for a work of art, either in painting or sculpture, eligibility for the award not to be affected by the nationality, age or sex of the artist, membership in any art society, or any other condition than the merit of the work of art, to Malcolm Parcell for "Louine."

The West Is the Leader in Public Improvements

THERE is to be a great deal of public building during the next six months. In fact, the public-improvements programme for 1919 will equal that of any five years in the country's history, and the road-building activities from the Atlantic to the Pacific, once under way, are to be tremendous.

"I have been much surprised to find the scope of improvement work in the West larger than in the East. Perhaps this may be accounted for in the fact that the West needs more improvements than the East. It is newer country. The governors and mayors of the West, almost without exception, realize the prudence of going in for public improvements as a source of buffer employment for labor and a means of stimulating general business. The West, too, is much interested in reclamation and is anxious to make land, heretofore arid and waste, available and suitable for farming by such former soldiers as wish to go back to the soil.

"Most of the governors of the agricultural States are anxious to get men from the army to settle in their States. This is because they believe the army represents the best manhood and brains of the country, and if their respective States can absorb soldiers, the governors believe the States will get the highest type of citizens and the best blood of the nation."

There is much criticism in the West of the federal government's failure to go ahead with its own building operations. In many localities federal buildings, for which sites, plans, and appropriations were had before the war, are now held up because the original appropriations will not cover present construction costs on the buildings desired. In such localities there is resentment over the fact that the government has not been granted additional money to carry on these building activities, and the fact that this has not been done is exerting a harmful influence on many private interests, which feel that if it is prudent for the government to refrain from building at this time it also is prudent for the private interests to follow the same course.

Kenyon Cox

IN the death of Kenyon Cox, America lost one of her foremost artists, and one whose influence in the betterment and a wider appreciation of American art in general will be greatly missed. Mr. Cox always stood for sanity, for conservatism, for thoroughness. His own work was marked by his belief in the soundness of academic traditions, and his drawing of the human figure can only be adequately expressed by the word masterly. As a mural painter Mr. Cox was known by important work in various parts of the country, notably in the Library of Congress, Bowdoin College, the State Capitol, Minnesota, the Appellate Court, New York, the Essex County Court House, Newark. Mr. Cox was the recipient of the gold medal given by the Architectural League for Mural Painting. As a teacher his work was for years of inestimable value, and he was looked up to and admired by a large part of the present generation of art students. Mr. Cox was also distinguished as a writer on art subjects, and no one wrote more clearly, with greater knowledge. He wrote not only for the artist, but his articles and books are read with delight and profit as well by the laymen. He had no sympathy for the ultra-moderns, the cubists and their ilk, and he expressed his opinion of them in no measured terms. His books, "Concerning Painting," "The Artist and Public," "The Classic Point of View," have taken a permanent place in our modern art literature.

Owen Brainard

OWEN Brainard, widely known throughout the country as an architect and one of America's foremost civil engineers, died suddenly of heart disease on the evening of the 3d of April.

Mr. Brainard was born in Haddam, Conn., in 1865, coming to New York when a boy. He was known for a number of years as the chief engineer of the firm of Carrère & Hastings.

In 1907 Mr. Brainard established a business of his own as consulting engineer at 52 Vanderbilt Avenue. Since then some of his most important work has been the designing of the New Theatre, now the Century, and the industrial villages of the United States Steel Corporation.

Mr. Brainard was a member of the American Society of Civil Engineers, the American Institute of Architects, Architectural League of New York, City Planning Association, the Century, Engineers', and Apawamis Clubs.

The Relatively Small Advance in Building Costs

AT the close of the war the index number of building materials, not including steel, had risen only 61 per cent over the pre-war prices of 1913, while the index number for commodities, exclusive of building materials, had risen 113 per cent. The average increase of wages in the construction industry in forty-one leading cities from 1914–18 was only 28.5 per cent as against a rise of 94 per cent in commodities. When the armistice came, there was, of course, a great volume of deferred construction projects, partly in the form of public works, partly in the form of semipublic utilities, partly in the form of housing, and of commercial and industrial buildings. This volume of deferred construction represented in large part the curtailment of non-war production which had resulted from the diversion of one-third of the nation's industrial capacity to war production.

Arthur Durand Rogers

IT is with the most sincere regret that we record the death of Arthur Durand Rogers. His services for many years on behalf of the architectural profession were marked by high ideals, untiring zeal, and a sympathetic appreciation of both the artistic and practical sides of modern architecture.

VESTIBULE, 42d STREET ENTRANCE, HOTEL COMMODORE, NEW YORK.

Warren & Wetmore, Architects.

HOTEL COMMODORE, NEW YORK.

Warren & Wetmore, Architects.

BALLROOM, HOTEL COMMODORE, NEW YORK.

Warren & Wetmore, Architects.

BALLROOM LOBBY.

DETAIL, LOBBY, MAIN FLOOR.

HOTEL COMMODORE, NEW YORK.

Warren & Wetmore, Architects.

GRILL-ROOM.

MEN'S RESTAURANT.

HOTEL COMMODORE, NEW YORK.

Warren & Wetmore, Architects.

ENTRANCE, GEORGE C. REW RESIDENCE, CORONADO, CAL. Elmer Grey, Architect.

DETAIL IN LOBBY, TOWARD ENTRANCE, HOTEL PENNSYLVANIA, NEW YORK. McKim, Mead & White, Architects.

MAIN DINING-ROOM, HOTEL PENNSYLVANIA, NEW YORK.

McKim, Mead & White, Architects.

BALLROOM, HOTEL PENNSYLVANIA, NEW YORK. McKim, Mead & White, Architects.

GRILL-ROOM.

PALM-ROOM.

McKim, Mead & White, Architects.

HOTEL PENNSYLVANIA, NEW YORK.

ENTRANCE DETAIL.

GRAND FOYER TO BALLROOM.

McKim, Mead & White, Architects.

HOTEL PENNSYLVANIA, NEW YORK.

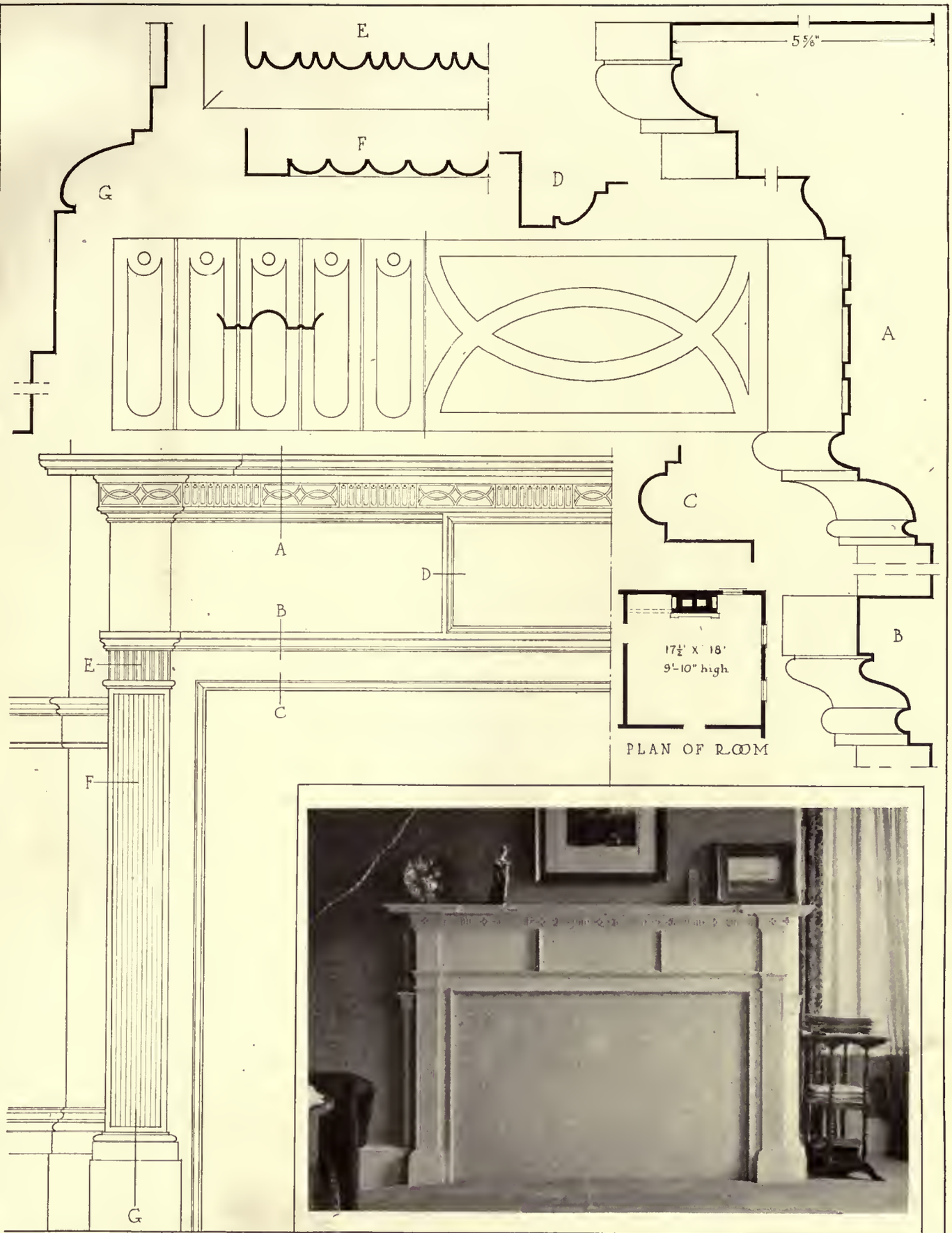
SOUTH PORCH, "TAMARACKS," RESIDENCE, FRANKLIN G. COLBY, ANDOVER, N. J.

"TAMARACKS," RESIDENCE, FRANKLIN G. COLBY, ANDOVER, N. J.

LIVING–ROOM.

DINING–ROOM.

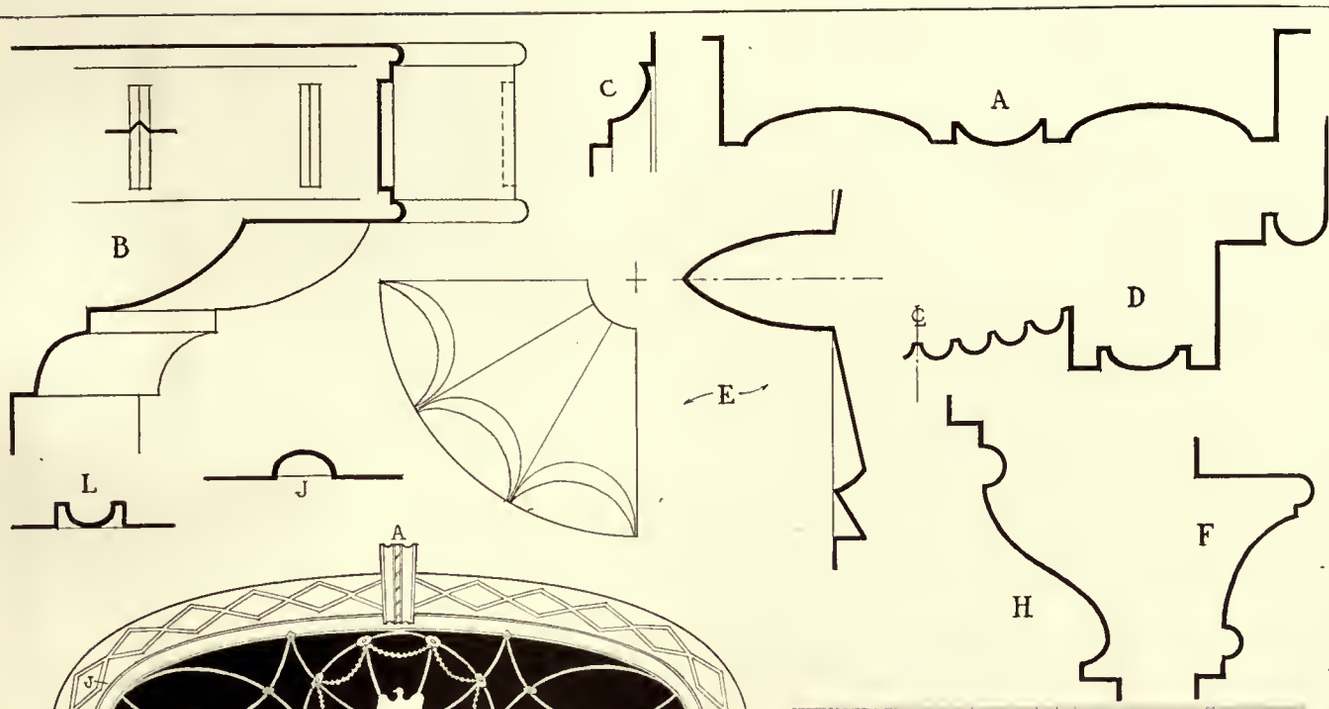
"TAMARACKS," RESIDENCE, FRANKLIN G. COLBY, ANDOVER, N. J.

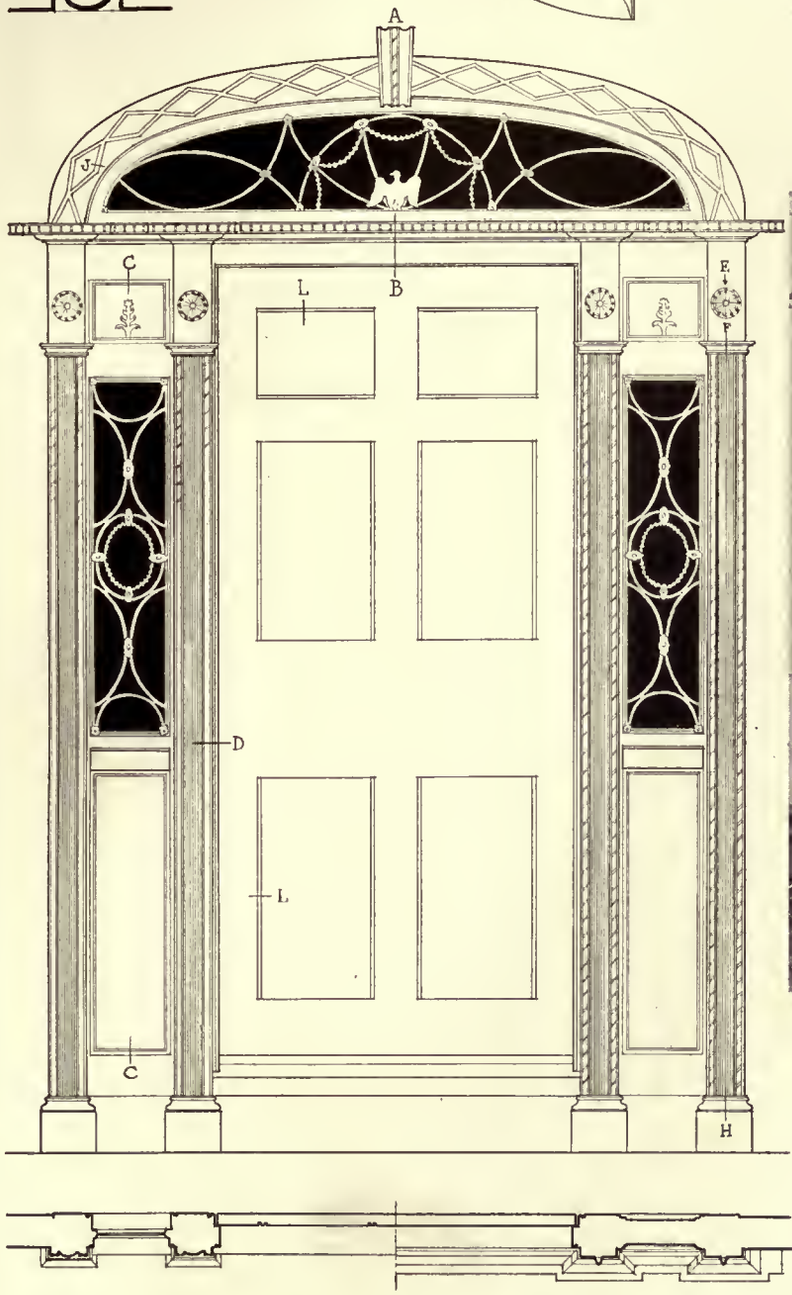


SCALE - ELEVATION - Inches
0 DETAILS 12 18
0 1 2

PARLOR MANTEL
THE AUSTIN HOUSE
BUILT 1810 - SKANEATELES, N. Y.

MEASURED AND DRAWN BY
CARL C. TALLMAN





PLAN

DOORWAY
SOULE HOUSE
SENNETT, N.Y.

Built 1814

ELEVATION - SCALE OF FEET

0 1 2 3 4

DETAILS - INCHES

0 1 2 3

MEASURED AND DRAWN BY

Carl C. Tallman

1918

Southern California's New Architecture—II

By Elmer Grey

THE Henry Dater house, near Santa Barbara, is another house of the Spanish type, but a very different one. Its difference serves to show what a wide variety of effect and expression may be obtained in the use of the same style. It is used as an argument against the wide introduction of Spanish in California, and in favor of a more general use of other styles, that the result of too much of one style would be monotonous. The difference between the Eltinge and Dater homes, both built in somewhat similar situations on the side of a hill, goes far toward dispelling such a theory. As one approaches the Dater house one also enters a forecourt, but instead of the main façade being irregular in treatment, as in the Eltinge house, it is quite formal. There is a central one-story portion flanked symmetrically by two two-story wings. Behind this central portion is an interior patio in which are planted palms and other trees, the tops of some of which may be seen peering over its roof. The treatment of the entrance doorway is effective because of its simplicity and good scale. It is severely plain, stone pilasters at the sides of the doors being connected above by a simple cornice treatment, and the whole being accented by a coat of arms cut out of the stone over the centre. The doors themselves are so large in scale as to seem almost as though intended for the entry of some giant species rather than for men, but their large size for some reason does not here seem out of proportion. They are of dark oak, severely plain, but relieved and enriched by a considerable number of beautifully chased bolt heads and a huge silver knocker. Upon entering, one comes into a narrow hallway, leading both to the right and to the left, and not until one passes around this portion of the hall does one come into view of the patio. When this is seen, however, its novel and beautiful effect compensates for the somewhat roundabout way adopted to reach it. At its farther end are three arches composing an arcade, the back walls of which are panels of beautifully designed and richly colored tile, the centre one constituting a wall fountain. Not only are the individual tiles in these panels beautiful, but they have been designed as parts of larger patterns covering the whole panels, just as the patterns of many Oriental rugs are so designed, and the effect brings very much to mind the idea of beautiful Oriental rugs transfused into the more solid material tile. In each of the four corners of the patio is a tree, around the bases of which are octagonal curbings decorated with more of the same tile. In the centre is a large rectangular pool, also edged with tile, and in the pool are kept a large school of goldfish, which have a way of darting from one end to the other, lending an additional note of color and interest to the scene.

Henry Dater house at Santa Barbara. Bertram G. Goodhue, Architect.

Fountain, George C. Rew residence, Coronado. Elmer Grey, Architect.

The plaster-work, both interior and exterior, has been done without the use of a darby, the floors (those which are not tiled) are made of heavy plank, the stairs are of brick with iron hand-rail, and the beamed ceilings of some of the principal rooms have been hand-adzed and finished to simulate age. Much of the furniture consists of antiques, many old paintings gathered in Europe, Mexico, and elsewhere adorn the walls, the effect of all these things being to impart a decided flavor of the past, a sort of historical atmosphere which accentuates the romantic effect conveyed by the court. One may or may not agree with this idea of planning and furnishing a home, but it certainly has an inescapable charm. Seated in this beautiful court, surrounded by the lovely tile-work and fountain and the greenery of the trees, one is forced to feel this charm whether one will or no. In its presence California becomes not alone a very beautiful

part of our country, but one also redolent of romance, history, and tradition.

About eight miles north of Los Angeles, and the same distance west of Pasadena, lies a beautiful country of foothills and valleys called La Canada. It is still almost wild in general aspect but is an ideal district for country homesites and has recently been opened up for that purpose. How often, when man builds amidst picturesque surroundings, and particularly when he selects conspicuous hilltops for sites, does the newness of his product seriously mar what is otherwise a beautiful scene! It seems particularly important when building in conspicuous positions and in a virgin landscape to have a building just right in design, and to have it tied to its surroundings with just the right kind of accessories. In La Canada, on the top of a very conspicuous hill, there is one house, the home of Mr. Malcolm McNaughton, in which just these conditions have been fulfilled; it is so appropriate in character and has been so perfectly tied to its surroundings as to make one feel glad that it was built there. The site would have seemed impossible for the purpose to many owners, so small was the level space available on the hilltop and so precipitous its sides. It has been made possible, however, and exceptionally beautiful by the simple design of the building, by the fortunate color of its roof tile and side walls, which blend with those of the surrounding hills, and by the many terraces of irregular shape built around it; terraces buttressed with rough stone retaining walls which follow the contours of the site and seem already as though they belong there although but a few months old.

The Malcolm McNaughton residence, La Canada. Reginald Johnson, Architect.

The roof is of a kind common to many of the successful houses of this style in California and calls for particular mention, so beautiful in color and texture is it. It is made to simulate the soft dull grayish-red roofs of Europe, or (not to go so far away) some of the original roofing tile on the old California missions. The separate tile are dull red, dull pink, and even dull blue in color, but they are so judiciously selected and so carefully blended that the result is a wonderful color harmony which must be seen to be appreciated. In texture they are also very different from most American laid tile roofs in that the tile are of a relatively flatter shape than usual and are laid irregularly as to courses and alignment rather than with mathematical precision. This method not only gives a much more interesting texture but, along with their color, gives them the same appearance that very old tile roofs have. As one writer has said regarding them: "The illusion of age is perfect."

The house is approached from a country road at a higher level, the lower side of the property being too precipitous for the purpose. In entering the grounds one passes first the garage, a building of similar style, then the road winds along the edge of a declivity for several hundred feet, and finally it ends in an irregularly shaped forecourt with precipitous sides, walled in by some of the above-mentioned terraces. From this forecourt, and also from the porches on the opposite side of the house, wonderful views of the surrounding country of rolling hills, cultivated valleys, and superb distances are obtained. It is from a lower road in one of these valleys that the house is seen to the best advantage. From there the stone terraces best exhibit their friendly purpose of tying the house to its surroundings. They pile up, one above another, as if to support it from firmer foundations lower down. The house itself, with austere lines, dull yellow walls, and red-tile roof, seems just the right note to surmount them. Behind all the mountains loom to furnish the proper background. Maxfield Parrish might have drawn such a scene for some of his fanciful groupings, Sir Walter Scott could have used it for fictional settings; it brings to mind a castle in Spain, though it is but the intelligent utilization of a hilltop for a home in California.

The Spanish vogue in California has been criticised by some on the score that it is not sufficiently homelike when used for residence purposes. It is said that when truest to type the window openings are too small to furnish the abundance of light and air which most Americans desire in their homes; and the colonial style is cited as one in which this fault is not to be found. It is true that numberless colonial houses do express in a dignified and charming manner American home life at its best, but it is also true that there are many situations in California (such as the one just described, for instance) where a colonial house would look totally out of place, would in fact be an intrusion upon a landscape utterly foreign to it. It would seem therefore that such faults as the Spanish style in California may have should be overcome; that by additional study on the part of architects it should be made to better conform to American home requirements. I think this has already been accomplished in a considerable number of instances, and one of these is the recently completed residence of Mr. George C. Rew at Coronado. On the south side of the Coronado peninsula, near to where Father Sierra and his companions must have first landed (indeed it may be the identical spot), there runs a broad boulevard skirting the Pacific Ocean. Huge rocks have been hauled and deposited along its ocean side to protect it from inroads of the sea; on its opposite side are the green lawns and beautiful tropical-looking street trees. When the waves break over the rocks and throw their spray high in the air, as they frequently do, the effect in contrast with the green trees and lawns opposite is inspiring. The Rew residence occupies a large piece of property

MAIN FRONT.

SIDE.

THE GEORGE C. REW RESIDENCE, CORONADO.

Elmer Grey, Architect.

facing this boulevard and the ocean, a lot which had long been used for residence purposes and has many years of arboreal and other growth upon it. It commands an unusually comprehensive marine view in an arc including Point Loma, the Coronado Islands, a part of the Mexican coast-line, and Table Mountain in Mexico. Yet along with this close proximity of the sea, so mild is the climate of Coronado that, in the garden back of the house (walled in with a high Spanish-looking tile-capped wall) are grown avocados, pomegranates, figs, oranges, mangoes, and many other kinds of warm-country fruits. Roses of many varieties bloom there profusely. Poinsettias do exceptionally well. A long row of acacias throws welcome shade. A grove of tall palms adds a touch of dignity. What more could be desired for a home environment than such growth combined with such marine views? And the Rew house has been planned to take the utmost advantage of both.

Its rooms are arranged around three sides of a patio, the principal rooms, however, also having an outlook toward the ocean. The patio is paved with tile, but around its sides and centre are beds of ferns, cycads, begonias, etc., and in one corner is a tall cypress-tree. Porches communicating with the principal rooms face it on two sides, while its third side opens upon the garden. In the second story is a covered balcony of semi-Moorish design looking down upon it, which balcony communicates with one of the principal bedrooms facing the ocean, thus giving that room a sheltered outlook upon the patio as well as the ocean exposure. The owner's bedroom, the guest-room, and an office are in a one-story wing adjoining the patio. The main hall, approached from a side street, is semicircular in shape with a winding stairway, and directly opposite as one enters is a pair of very beautiful wrought-iron grille doors, a copy of an old pair in Pamplona, Spain. They serve the purpose, in addition to their being highly decorative objects in themselves, of providing greater privacy for the living-room beyond, without entirely intercepting the view of it from the hall. The living-room is two stories high, vaulted overhead, and at one end is a huge fireplace of Batchelder tile, with figures and scenes depicting the early Spanish life of California modelled upon its robust columns and strong-looking frieze. A gallery in the second story looks down upon the living-room, the openings into it being guarded by wrought-iron grilles. In the second story is also a sun-room with arcades facing the ocean in three directions, the arcades being fitted with steel sash which open and virtually make of the room a second-story porch. The ceiling beams of the hall and also those of an alcove of the living-room are hand-adzed and finished to simulate age, and the interior plaster and its color are rather old looking, but in other respects the interior does not imitate old methods as far as do some of the former houses described. The library is finished in walnut, with modern bookcases running to the ceiling and another large mantel. The dining-room is panelled in oak, and the floors are the regulation type of narrow polished hardwood. The effort has apparently been to combine beauty of a Spanish type and some of its charming old atmosphere with a reasonable degree of modern refinement.

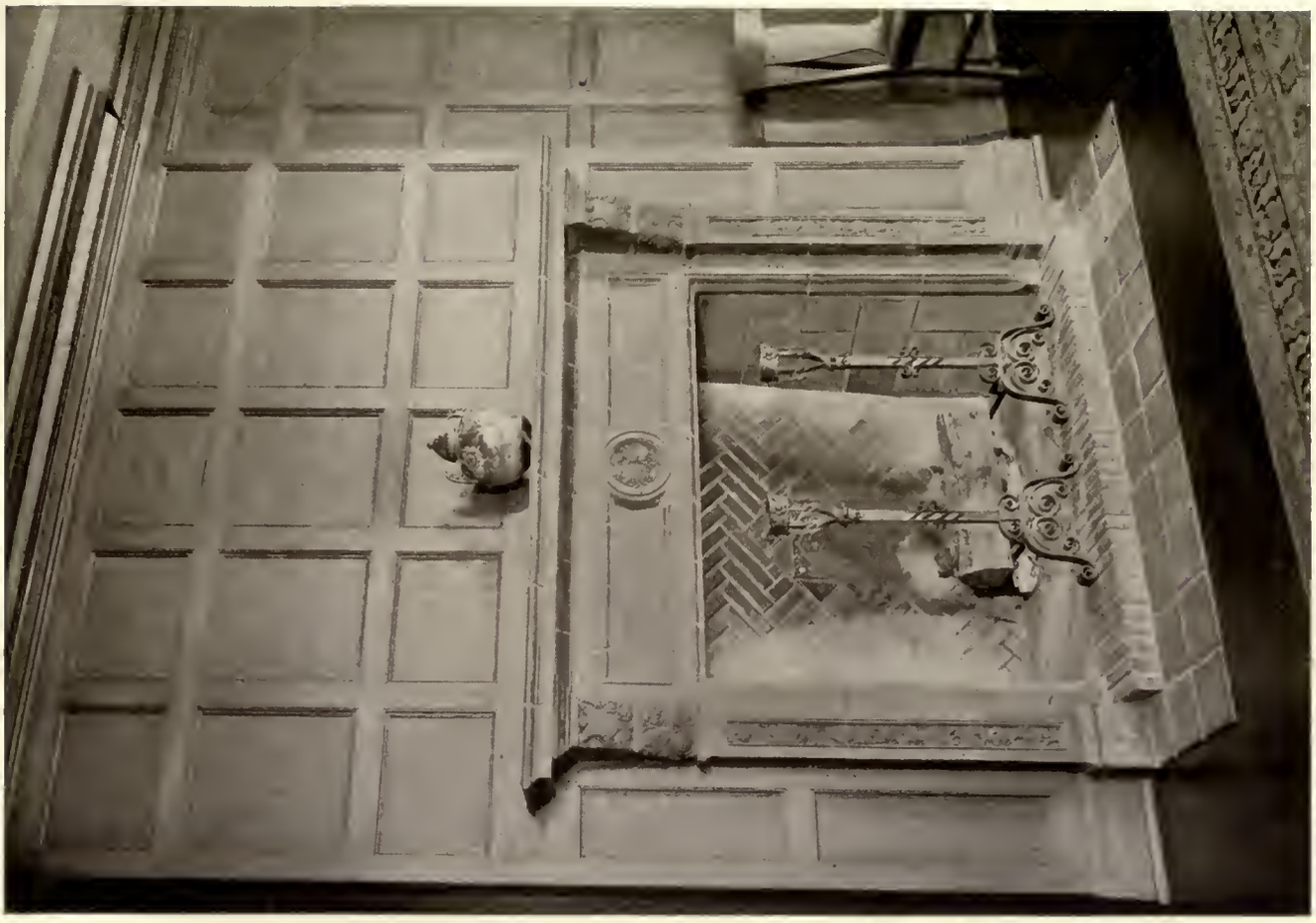
On the outside of the house the texture of the plaster is a notably successful feature. Beach pebbles, sifted to a small and uniform size, were thrown upon the walls when the plaster was soft, each one thus producing its own little bullet-hole, so to speak. In conformity with the proximity of the house to the Mexican border its exterior treatment shows marked Mexican feeling, this consisting of broad plain wall surfaces contrasted with rich ornamentation at some of the principal door and window openings. The ornament has been carefully studied for the effect upon it of light and shade, and the result is correspondingly good, such Mexican enrichment when well done having often been likened unto lace-work. The roof is covered with the same tile of remarkable color and texture described in connection with the McNaughton house. These characteristics taken all together, the interesting plaster texture occasioned by the dashed beach pebbles, the richly ornamented entrances, and the varied and colorful roof surfaces combine in forming a striking and effective exterior. Whether a house planned as this one is, with its principal rooms facing the ocean and its opposite side surrounding a patio facing a garden, is any less homelike than one of a different type could have been in such a situation may be a matter of opinion; but certainly, considering the historical associations which cling to Coronado and its vicinity, the eventful landings which have taken place upon its shores, and the venturesome spirits who have made their homes there, none could be more fitting.

There Is Little Danger of Loss in Judicious Building Investment —High Rents Will Make Up for Increased Cost

THE cost of construction is not high to-day. It is low compared with food, clothing, and commodities in general. It is high only in comparison with its own pre-war level. Commodity prices will undoubtedly recede because food and clothing and many other things were affected by special war conditions, for example, scarcity of transportation, which prevented shipments from distant countries to the Allies. But they cannot fall to the pre-war level.

But, although some readjustments in the wages of individual trades and in the prices of individual classes of building materials may take place, the cost of construction will not come down to such an extent as to endanger a judicious investment made to-day in the erection of a new building. Where the rents offered will show a fair net return on the cost to-day of a new building after deducting a reasonable sinking-fund allowance, no one should hesitate to build or to lend money for building.

Rents are determined by supply and demand. In the case of housing, during the early part of the war, the demand was curtailed by the rapid advance in commodity prices, which impelled many tenants to crowd into or get along with less space than their normal standard of living required, and by the drafting of the young men of military age. With a year, however, these influences had spent their force. By the end of 1918, according to the replies obtained from a questionnaire sent to real-estate boards in ninety-one cities, only four of these cities had a housing demand that was below normal, while in fifty-two cities rents had advanced 10 per cent or more, in some instances, 40 per cent to 50 per cent. This rise in rents took place at a time when the population at home was as economical of house-room as possible and while several millions of soldiers were absent in the service.



MANTEL IN DINING-ROOM. Elmer Grey, Architect.

HALL, SHOWING WROUGHT-IRON GRILLE.

GEORGE C. REW RESIDENCE, CORONADO, CAL.

Scientific Management of the Drafting-Room

By Henri C. Heps

General Manager in the office of Mann & MacNeille, Architects and Construction Engineers

HOW TO DETERMINE THE VALUE OF A DRAFTSMAN

THERE are many subjects of interest in connection with the scientific management of an architectural office, but perhaps those which strike the most popular note have to do with the reduction of overhead and the increase of office efficiency.

In analyzing cost in many architectural offices it is found that owing to lack of careful determination of the value of individual draftsmen, a low average of efficiency is maintained, with a resultant contribution to the office overhead, which is unnecessary and unbusinesslike.

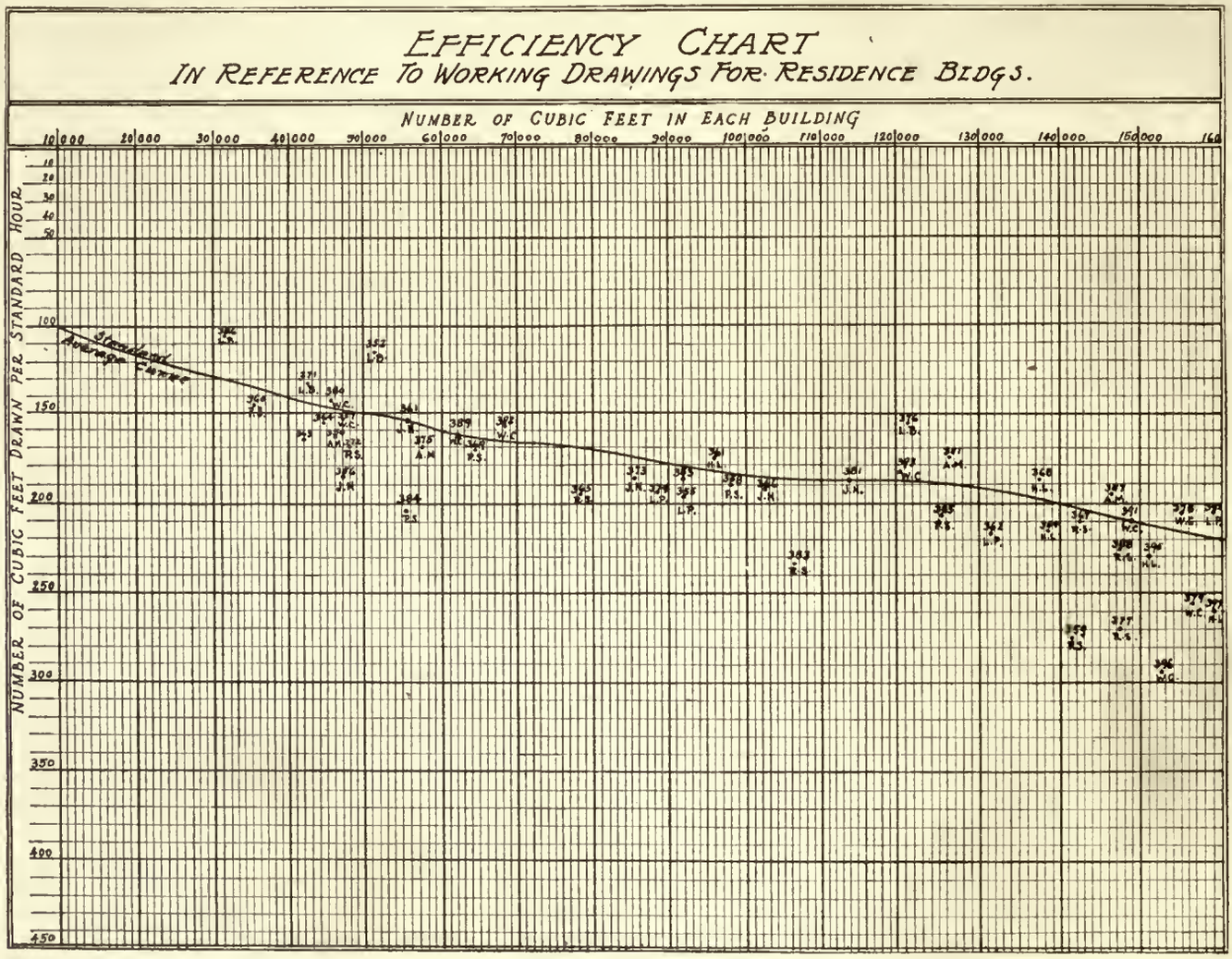
How much is this or that man worth to me in dollars and cents? Here is a question that every architect would like to answer, but very few are successful in determining a method even of approximation.

It is for the purpose of demonstrating to the profession a scientific method by which the value of a draftsman can be determined that this article is written, in order that the efficient man might not be underpaid and the inefficient overpaid, which is the case in so many architects' offices.

The means of determining the value of the men is the accompanying chart, but before touching upon the chart itself a few important explanatory notes are necessary.

In our office we draw a very distinct line between designs or sketches and working drawings, and it is, in my opinion, fatal to try to measure a designer's ability by the number of hours it would take him to produce a sketch. That is work that requires creative imagination, and our designers are not judged by the amount of time they put into the solution of an architectural problem, but solely by the results which they obtain, irrespective of cost, so that this part of the work does not come under this category. Only after sketches have been approved, and the work is turned over to general draftsmen to be developed into working drawings, can we begin to apply scientific methods in accomplishing the different ends.

It is found advisable to prepare a separate chart for each type of building, such as residences, schools, office buildings, factories, and for the purpose of this article we will consider the efficiency of a draftsman in preparing one-



quarter-inch working drawings for residence buildings, as determined by the accompanying chart.

In working out this chart the cost has been taken of draftsmen's salaries for preparing working drawings of twenty-five typical residence buildings costing $25,000 and under. It was found that this cost averages 7.8 per cent of the total income on each job. In dollars and cents it means that for a residence on which the architect's commission is $1,200, the complete working drawings were prepared at a cost of $93.60 in draftsman's time, and so on, according to the size and cost of the building. This is, no doubt, a great deal less than the records will show in some offices, but in preparing a chart such as this, the architect should use his own average, and improve on it as he goes on.*

After having determined what the average is, we then take the size of these buildings in cubic feet. The residence mentioned above would represent approximately 35,000 cubic feet. Next we must determine the value of a "Standard Hour," which for purposes of this article has been placed at thirty cents. This "Standard Hour" is the gauge we use to measure by. Now that we have the amounts to be spent on working drawings, the size of the building in cubic feet, and the value of a "Standard Hour" at thirty cents, we are ready to prepare our chart. The vertical lines on the chart represent 1,000 cubic feet each in the size of the buildings, and the horizontal lines 10 cubic feet for each "Standard Hour," or each thirty cents represented in the cost of preparing the working drawings of each building. The curved line on the chart, known as the standard average curve, indicates the number of cubic feet that the draftsman should be able to draw per "Standard Hour," and this is determined by dividing the amount allowed for the working drawings of a certain size building by a "Standard Hour," or thirty cents, and by dividing the number of "Standard Hours" thus obtained, into the total number of cubic feet represented in the building, which will then give you a certain number of cubic feet per "Standard Hour." This will vary for each building as it is reduced or increased in size, and the standard average curve is plotted accordingly.

In order to assist in plotting the standard average curve on the chart, it is suggested that a table be prepared, giving in the first column the cost of the building, in the second column the amount of the architectural commission, in the third column the amount allowed in draftsman's time for the preparation of the working drawings, and in the fourth column the size of the building in cubic feet.

The following table has been worked out as described above for residence buildings ranging in costs between $10,000 and $75,000. Our past records show that when the cost of a residence runs over $40,000, the net cost of the working drawings is reduced to 7 per cent of the total commission. This is shown in the table referred to above, and is, therefore, automatically recorded on the chart by the standard average curve.

COST OF BLDG.	AMOUNT OF ARCHIT. COM.	ALLOWED FOR W. D. 7.8% OF COM.	SIZE OF BLDG. IN CUBIC FEET
$10,000.00	$1,000.00	$78.00	30,000
12,000.00	1,120.00	87.00	38,000
14,000.00	1,240.00	96.72	45,000
15,000.00	1,300.00	101.40	50,000
16,000.00	1,360.00	106.08	53,000
18,000.00	1,480.00	115.44	60,000
20,000.00	1,600.00	124.80	67,000
22,000.00	1,720.00	134.16	73,000
25,000.00	1,900.00	148.20	85,000
30,000.00	3,200.00	165.60	100,000
35,000.00	2,500.00	180.00	110,000
40,000.00	2,800.00	200.00	115,000
45,000.00	3,100.00	217.00	140,000
50,000.00	3,400.00	238.00	158,000
55,000.00	3,700.00	259.00	165,000
60,000.00	4,000.00	280.00	170,000
65,000.00	4,300.00	301.00	175,000
70,000.00	4,600.00	322.00	180,000
76,000.00	5,000.00	350.00	190,000

*See July, 1917, issue of ARCHITECTURE for an article by Mr. Heps on the scientific preparation of working drawings.

It might be of interest to know that for buildings of this type the cost of preparing working drawings becomes smaller while the cost of preparing details becomes larger, and this for obvious reasons, which will be readily understood.

After the standard average curve has been carefully plotted, the chart is ready for use. All that remains to be done is to plot each new set of working drawings on this chart, figuring out in each case how many cubic feet were drawn for each "Standard Hour" represented in the cost of the working drawings. If the mark comes above the standard average curve the draftsman does not come up to the average, and his work is not being done efficiently. In which case, it behooves the management to determine whether the fault lies with the draftsman himself or with the conditions under which he works. If the mark comes on the line the draftsman is doing what is expected of him, and if it comes below the line, the draftsman, after a few similar performances, should get a raise in salary.

This chart, in addition to furnishing the management with the information so eagerly sought after, provides the drafting force with a wonderful incentive to do good work, and to bring out the best that is in them, since they know that the management is constantly in possession of absolute records attesting to their accomplishments in the office, and that their advancement depends entirely upon their own merit.

There are, of course, other factors which have considerable bearing on the organization and personnel of the drafting force. Some of the important qualities which should be given due consideration with draftsmen, are summed up in the following: VERSATILITY, ACCURATENESS, INITIATIVE, CO-OPERATIVE SPIRIT, ASSUMING RESPONSIBILITY—any draftsman who lacks any or all of these qualities finds himself seriously handicapped in performing his work, and it is next to impossible for such a man to develop himself through the various stages of the architectural profession and become an important factor in an architectural organization.

The management of our organization takes considerable interest in, and keeps record as far as possible of, the career of a number of draftsmen, designers, and engineers, and the following facts will clearly illustrate the possibilities which lie open to most men if they will only grasp the opportunity.

One of our large architectural offices, up to a few years ago, had a drafting force which numbered among its personnel the good, bad, and indifferent.

As to the "good," they are now all successful and are taking care of themselves. As to the "bad," these were, for the most part, hopeless, and should have been employed in a different vocation, and it is gratifying to note that some of them have at last realized this themselves, and are at present more successfully employed in a different field. The "indifferent" are truly to be pitied, for they are still in the same class, and the discouraging feature is the fact that men of this type are getting more numerous every day, while they have it within them to make good and become a real asset to any organization if they will only put their minds to it. This type usually arrives in the office promptly

at nine in the morning, leaves at five o'clock in the afternoon, keeps pretty well occupied during the day, and in general does just about what they are told to do, and no more. These men have no interest in the work they are performing; they do not ask nor care about the "why" and "wherefore" of things, they don't live with their work but apart from it, they can never give a constructive criticism, never take the initiative, nor do they assume responsibility in any degree, however small. The result is obvious. Men who belong to this class drift from one office to the other, and seek an increase in salary every time they change their position. Their stay in any office is usually of short duration, since it does not take the management long to find out that their capacity is very limited, and presently they become dissatisfied with everything in general, and architecture in particular. This type of man has a great disintegrating effect on the morale of any drafting force. He is forever comparing his salary and his chance for advancement with the more successful men around him, and is loud in expressing his dissatisfaction with the unfairness of the management, without realizing that he himself clogs the wheels of his own progress.

The chart referred to in this article is very unpopular with the men that belong to the "indifferent" class, since they are unable to have their work follow the standard average curve.

As further explanation of the chart itself, your attention is called to the number over the dot, which represents the job number, and to the letters under the dot, which represent the initials of the draftsman in charge of the working drawings. A condition may easily exist where more than one man is employed in the preparation of a set of working drawings. In that case the man in charge of the working drawings is responsible for the work of the men that assist him in developing them, and his initials are those which are placed under the dot designating on the chart the degree of efficiency with which the work entrusted to his care has been performed.

It has been an interesting experience to see what a different spirit can be instilled in the drafting force of an architect's office where all men are judged and valued according to their own steel, instead of according to their looks, their clever talk, or their pedigree.

The work which emanates from an office managed along scientific lines not only proves more satisfactory in the general course of transacting business, but is more economical as well, the satisfaction of which is reflected in the faces of each member of the organization, from the senior partner of the firm down to the office boy.

Farm Improvements and Rural Construction Work Will Aid in Readjustment

FARM products have a greater purchasing power today than ever before in the country's history. This may explain why rural districts of the country rapidly are getting under way with building and construction work. It is obvious, since building and construction work have such an important bearing at this time on stimulating general business, the farmer may serve both his own and the national interest by at once making needed improvements on his property. He can further the general welfare while assuring himself of immediate and permanent benefits, in urging road construction and improvements in his locality.

It is generally understood no material reduction may be expected in building and construction costs in the near future. To be sure, prices on some materials may be slightly reduced in the readjustment, but the best authorities on the subject assert no pronounced reductions are probable. This is explained by money conditions, the foreign demand, and the marked curtailment of production of building materials during the war. Professor Fisher, of Yale University, has issued a statement in which he says the country is on a new price level from which there will be no general recession.

Many farmers have been unable to get materials and labor for barns, silos, houses, and other improvements during the war. The farmer who at once avails of the labor supply and gets his improvement work under way, in the long run, may prove to be the prudent business man, for there is reason to believe that farmers who delay in the hope of materially reduced construction costs will have been deprived of the use of these improvements, and in the end be forced to pay approximately the building prices now prevailing.

In several States, among them Missouri, Oregon, and Colorado, silo-building campaigns are being carried on by the agriculture colleges. In Wisconsin there is a milk-house campaign being vigorously prosecuted in the dairy districts, while in Illinois farmers are being urged to build feeding floors. Other campaigns for farm improvements are on in Nebraska, Kansas, Minnesota, South Dakota, Kentucky, Ohio, and in localities in Texas and Iowa. While many of these are being conducted by building interests, the Division of Public Works and Construction Development of the U. S. Department of Labor is interested in seeing them successfully carried out because the division realizes such activities on the farms are bound to have a beneficial effect on general business conditions.

The farmers of the country should have an unusual interest in road-building at this time. If farming is to continue on its present profitable level there must be no business stagnation in the country, and the vast road-building projects in the various States are destined to exert a profound influence in keeping "business as usual," or "better than usual."

No Material Reductions Expected in Lumber Prices

HORACE F. TAYLOR, president of the National Wholesale Lumber Dealers Association, writing from Buffalo, N. Y., to the Division of Public Works and Construction Development of the U. S. Department of Labor, does not hesitate to say material reductions in lumber prices will develop very slowly, if at all. Mr. Taylor says:

"The very clear majority of opinion we derive from representatives of the industry in all parts of the country is, in effect, that there will be no further reduction in the cost of lumber for a long period, and that there is no safe ground, therefore, for postponing building in the hope of a price reduction in this material. We look upon the present rather quiet conditions as temporary only and due to industrial readjustment, soon to give place to very sound activity. The cost of making lumber offers no chance of reduction, both on account of materials and supplies and the cost of labor, which it seems not only necessary but desirable to maintain at as nearly an adequate rate as possible in view of the present cost of living."

The Building of "The Tamaracks"

By Franklin G. Colby

IT is every one's dream to have or build a beautiful home for themselves. That the earlier dreams of such a home are often unrecognizable in later dreams when people have travelled abroad and seen more of the world was so in our case, changing a castellated exterior into a northern Italian exterior as being more suitable and pleasing to the general American landscape.

Temptations befall the dreamer in using old houses or sites that have charm and interest, without consulting their daily life and mode of access, especially if in a hilly country. My experience is that it is much better to measure old stone houses or decrepit buildings, burn or blow them up, and rebuild the duplicate much cheaper than to attempt to remodel the old.

The old house before alteration.

In my case, in the hills far from any town or village, it was necessary to get some Italian laborers, formerly working in a railroad-construction gang, without experience or knowledge, to erect the main walls and partitions of the fireproof house, with cement floors and roof, as shown in the photographs. My previous experience in masonry was occasionally noticing men in the streets of New York wheeling barrels of concrete into a building, or down some subway hole, but these common laboring men were helpful, and I knew what I wanted when I saw it constructed.

We had determined that our windows should be of leaden panes, based on the mediæval, size of glass 4¼ inches square and the diamonds 7½ by 5 inches, throughout the house, instead of the magnificent and gorgeous plate-glass windows representing my earlier desires. The window-sill-frame manufacturers said that I would have no trouble in making the cement recesses which would allow the windows and the screens to set in it if I came within ⅛ of an inch of the actual measurements required, instead of 8 inches, which latter margin I considered a fair one for my order of intelligence.

The actual building of the house began after we had assured ourselves of the water-supply from some underground springs or open reservoir of concrete.

My wife and daughter assisted most effectually in suggestions and color schemes. To make our work certain, they built a model pasteboard house, making the walls a cement color and the cement roof red, with the windows in their proper location. We then had a facsimile of the house we proposed to build, and I am free to admit I could not have built the house without this model, as the number of windows and placements between the crude plans I had drawn for each floor needed the reinforced information of this model pasteboard house to put my plans into effect, also the radical changes made during construction.

Having had some practical experience, the plumbing problems and heating arrangements of hot water were easy, although the laborers had a way of knocking the pipes out of the walls and filling them with refuse, which showed that there were difficulties which no mind could anticipate.

The general site was on a shoulder of a mountain, surrounded by five small mountains or hills, and we began blasting in November, 1913, and continued in the cellar and surrounding parts of the building until June, 1914. We used the stones of part of the old house and fence-rows adjoining for the outside walls, which were 16 inches thick, plus 3-inch split tiles placed upon cement plaster as an air space against cold or heat.

Timbered ceilings were cut in adjacent woods, and all the inside partitions were 3 or 4 inch tile throughout the house.

All windows, with one or two exceptions, had embrasures or splays of 9 inches, to admit more light, and the floors were made generally of 4-inch concrete, twenty-five shovelfuls of coarse sand to a bag of cement, or about 4½ to 1 mixture.

Regarding a concrete roof. I took special pains to make inquiries as to the feasibility of concrete, at which some shook their heads and were doubtful, and the cement manufacturers were equally uncertain. I put in 5-by-6-inch heavy oak timbers throughout the roof, with oak boards planed on one side, which helped to protect the condensation feature, but omitted to make a ½-inch crack of my own over every 10 feet of the roof, which I have subsequently done in other buildings with perfect success. The roof has many cracks, so small and narrow that it is difficult, in expansion and contraction, to fill in this roof of 100 by 60 feet and locate them, but the cheapest form of asphalt-road tar, liquefied with a little cheap lubricating oil, repairs the damage. The ½-inch cracks should have been made with a bevelled board, with a little sawdust at the bottom, and asphalt run in between the cracks that will expand and contract with the heat and cold and keep everything absolutely tight.

The only wood in the house is in doors and furniture.

The baseboard of the rooms is of cement and the upper walls of rough plaster, which are either painted or tinted.

The floors are tiled by second rejected roof-tiles, which

LIBRARY WING AND TERRACE.

CHINESE ROOM.

"TAMARACKS," RESIDENCE, FRANKLIN G. COLBY, ANDOVER, N. J.

STAIR HALL.

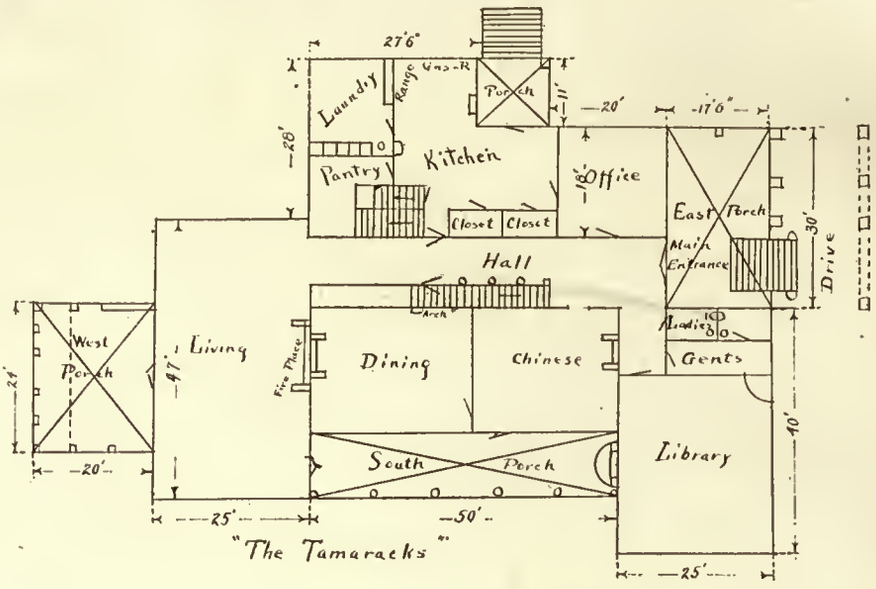
CORNER IN LIBRARY.

"TAMARACKS," RESIDENCE, FRANKLIN G. COLBY, ANDOVER, N. J.

gives you an idea of a mediæval building at once. These were put in on account of their low cost.

It took us about a year to get the main structure up, and as the roof went on I was somewhat anxious lest the largeness of the home should be a disfigurement on the landscape, but was too tired to walk away to get the effect. I was taken over some fields in October, and found that the wide, overhanging eaves and color scheme blended very well indeed with the country, not only with the fall landscape and oak-leaves, but in winter or spring with the green, as the sand used gave a yellow, warm tint to the outside cement without the addition of any other color.

The library decorations were made by my daughter, based on the old mediæval bookcases in Oxford, Cambridge, and European cities, and there is also a modified form of the Davanzatti Palace chimney. The 4-by-42-feet mural decorations of *The Legend of Melasine* were also painted by her.



The living-room, where we constantly live before the 12-foot fireplace, was designed by my wife, more after the French types, and the adaptation of the chimney and the decorations are of a period of about Francis I, who hired Italian decorators.

The ceilings throughout the lower floors are a close imitation of the Cluny Museum, ceilings with 12-inch-square solid main timber, with 9-by-6-inch cross timbers, taken from the adjacent woods. They made a very cheap and effective floor and ceiling.

The studio covers two floors, 25 by 40 feet. The roof trusses were after photographs of an old French monastery interior, and similar to those in the banqueting-room in Haddon Hall, very early and primitive, of simple design, which were the only ones I was able to follow and execute.

In the cellar we have a portion for reserve cistern-water, milk-house, cold-storage room, vegetable cold-storage rooms, heating, besides a fair amount of the granite mountain left unremoved.

The eastern or main front door is guarded by two Roman lions, in cement, opening on a 12-foot hall that has a clear view for 85 feet east and west through an 8-foot window in the living-room.

Very necessary rooms are the ladies' and gentlemen's lavatories and coat-rooms, next to the main entrance-door, the idea being taken from English houses.

The southern porch and colonnade give all that was expected of them in bad weather and a comfortable place to sit in the sun during the winter.

The grounds were laid out by my wife after carefully studying our possibilities, and executed with the remnants of débris, rocks and stones, covered with cement, from near-by land, and use of cement ornaments.

The pergola, while differing somewhat from the Italian types, gives a finished appearance to the garden. The moulded cross-ties are in cement.

Outside of the immediate garden, all the rest of the surrounding country is given over to nature and wildness.

The building itself, after the recent severe winters and summers, has proved that it is equally indifferent to heat or cold or gales, without any effort or strain upon the heating apparatus, and in the summer, for comfort, the only necessity is to keep the windows and doors closed most of the time. There is no dampness within the building; the atmosphere within the house is similar to the freshness of the outside atmosphere, no matter what the temperature may be.

Everything done had a cause and effect. There was no false work put in for appearances anywhere in the interior or exterior.

Louisville's Million-Dollar Factory Fund

AT the annual meeting of the Louisville Industrial Foundation, the Million-Dollar Factory Fund of Louisville, the general manager, Tampton Aubuchon, reported to the stockholders that during the past two years twenty new factories had been located in Louisville as the result of the foundation's efforts. The new factories employ 3,000 operatives and have an annual pay-roll of $2,000,000. Twelve factories were reported for 1917, and eight new peace-time industries were reported for 1918. These factories were acquired by the foundation at a net expense of $15,000. It was shown that for every dollar expended, the city acquired business transactions bringing thirteen dollars profit annually.

The meeting was attended by a large percentage of its stockholders. There are 3,200 stockholders in the foundation, and the vote for the Board of Directors showed that 2,500 shares of stock were voted. The directors who had charge of the work for the past two years were re-elected.

The Louisville Industrial Foundation, popularly known as the Million-Dollar Factory Fund, was organized in July, 1916, capitalized at $1,000,000, and its purpose is to assist in the industrial development of Louisville. In addition to bringing new industries to the city it also assists in the development of established industries.

New Jordan School, Waterford, Conn. Louis H. Goddard, Architect.

The New Jordan School Building at Waterford, Conn.

By Chas. F. Dingman, Assoc. M. Am. Soc. C. E.

THE Jordan school building, recently completed for the town of Waterford, Conn., is an unusually interesting building, not only by reason of the foresight used in building a building larger than the immediate needs of the district, but also on account of the form of contract under which the work was done.

The new building was built to replace an old brick building which was destroyed by fire on February 10, 1918, supposedly of incendiary origin, and which burned out practically the entire interior of the old building and damaged a great deal of the stone trimmings, as well as weakening the old walls so much that it was determined better judgment to tear them down and use the brick than to attempt to use them as they stood.

Even though Jordan is a very sparsely settled community the old building had been rather crowded, and it was determined to increase the size of certain rooms and add three more so as to accommodate the rapidly growing attendance. The comparison between the plan dimensions of the old and new buildings is shown on the accompanying drawings.

The school board selected as architect Mr. Louis H. Goddard, a resident of the town of Waterford, to take charge of the work, and he presented a design of a thoroughly modern and up-to-date schoolhouse, one which is of the type of a city school rather than an old country district school.

The new school provides nine large classrooms, as indicated on the plans, all of which are trimmed in oak, with all plastered surfaces tinted light bluish-green, natural-slate blackboards being used.

Provision is made for an assembly-hall on the second floor by using a folding partition between two of the classrooms, the partition being of the usual type, with blackboards, so that it can be used in the regular manner when closed.

The construction of the building itself is the usual type of brick walls, with wooden floor beams, etc., brick cross walls, and gypsum block partitions, the entire building being designed with the idea of providing as much protection against the spread of fire as would be practicable without going to the expense of an entirely fireproof building. All classroom and corridor floors are double, consisting of a rough floor of yellow pine, a layer of deadening felt, and a finished floor of tongued-and-grooved maple.

The stairs are of wrought iron with concrete fill treads having a nonslipping surface. The exterior of the building is of Barrington "Harvard" brick and the interior of the stairways is laid in fire-flashed Iron Clay brick. The exterior basement walls are composed of granite ashlar, using the stone from the old building and filling out with new Monson (Mass.) granite. The exterior stone trim is also of Monson granite, but the cornice and parapet are of white pine.

Inasmuch as there is no public water-supply or sewerage system available at Jordan village, it was necessary that particular attention be paid to these features. In the old school outside closets had been used, but the board decided that modern plumbing should be installed in this building; therefore a brick cesspool was built, about one hundred feet from the building, and the sewerage from all the plumbing fixtures is disposed of into it. Automatic seat-flushing type of closets was used throughout.

Water-supply is provided for by an artesian well sunk under the school, from which the water is pumped into a one-thousand-gallon tank by means of an electrically operated pneumatic "Paul" pumping system, which is so connected that the motor is cut in when the water pressure is down to fifty pounds, and cut out when it is up to sixty pounds.

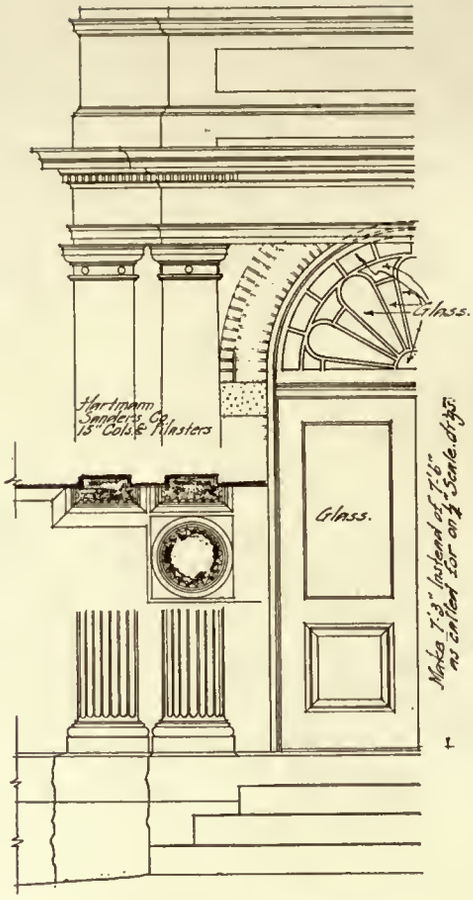
The heating system was constructed under the following specifications:

"The apparatus must be guaranteed by the contractor to warm the building to 70 degrees in zero weather, and to be free of all defects for one entire school year after completion.

"The ventilation must be adequate to supply fresh air to each classroom to the amount of 30 cubic feet per minute for each pupil, when the difference between outside and inside temperature is not less than 40 degrees, and that the vitiated air be exhausted from each classroom in an amount equal to 85 per cent of the supply, with a velocity not greater than 400 cubic feet per minute, and a difference of not over 3 degrees in the plans of breathing in any part of each classroom."

Electric bells, electric wiring, etc., were provided in accordance with the usual specifications.

A particularly interesting feature in connection with the construction of this school is the form of contract which was used. The town of Waterford has had some rather costly construction experience in the past, in one instance practically two years were consumed in the construction of a very moderate-sized building, and the citizens of the town, as well as the school board, were loath to award the contract on the old lump-sum basis, because they feared that they would not have the building completed so that it might be occupied for the opening of the fall school term.



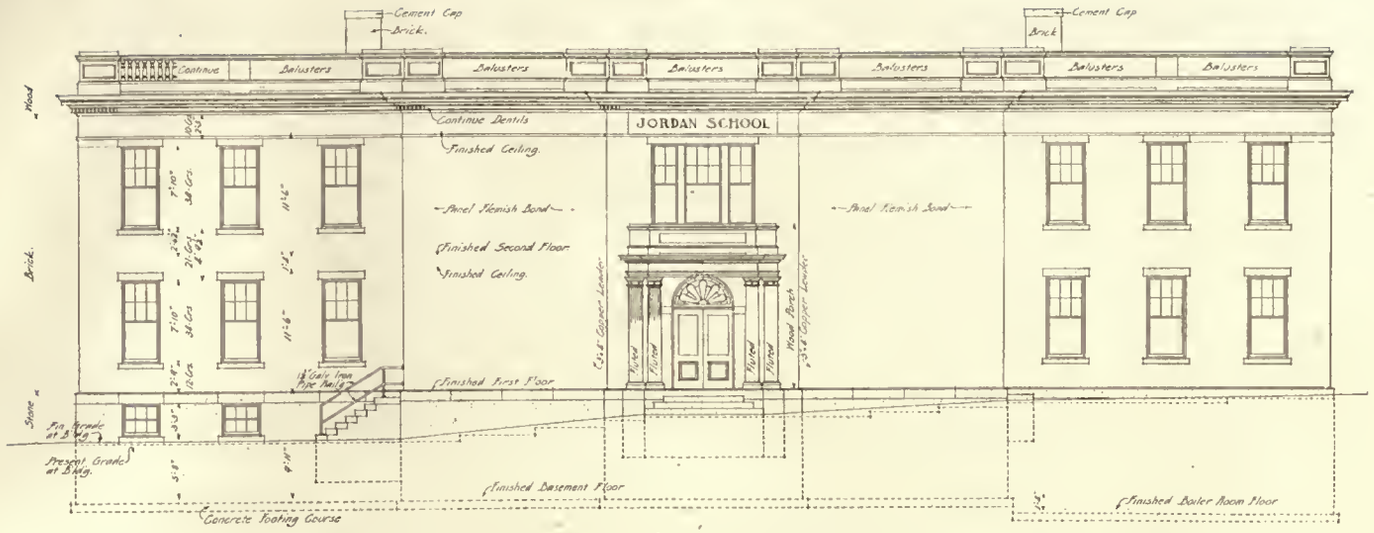
The great amount of war work being done at New London, which Waterford adjoins, at that time had made all kinds of construction labor scarce and high-priced, and the same was true of most building materials. This added to the doubt as to the feasibility of a lump-sum contract. Accordingly, after receiving and considering several lump-sum bids which were submitted, a special town meeting was called and the entire matter put before the voters. After considerable discussion they voted to award the contract, on the basis of actual cost plus a fixed fee, to the Flynt Building Organization of New York City and Palmer, Mass. They, fortunately, were able to put the work through in accordance with the original time schedule, and it is notable that only one-half hour of overtime wages was paid.

The final cost was as follows:

	TOTAL	PER SQUARE FOOT OF BLDG.	PER CUBIC FOOT OF BLDG.
Plumbing	$4,100	$.265	$.02
Heating	5,280	.341	.026
Roofing	1,830	.118	.009
Painting	1,575	.102	.008
Electrical	990	.064	.005
Iron and steel	4,700	.305	.024
Finished carpenter work	10,200	.662	.051
Rough carpenter work	6,171	.399	.031
Plaster	3,720	.241	.018
Granite	4,650	.301	.023
Brick and concrete work	27,200	1.759	.135
Total	$70,416	$4.557	$0.350

	PER CLASS-ROOM	PER PUPIL
Plumbing	$455.55	$9.12
Heating	586.65	11.73
Roofing	203.34	4.07
Painting	175.00	3.50
Electrical	110.00	2.20
Iron and steel	522.22	10.44
Finished carpenter work	1,133.34	22.67
Rough carpenter work	685.66	13.71
Plaster	413.34	8.27
Granite	516.67	10.34
Brick and concrete work	3,022.23	60.43
Total	$7,824.00	$156.48

The work was at all times under the supervision of Mr. Louis H. Goddard, architect, and Mr. Selden B. Manwaring, chairman of the Building Committee of the Waterford School Board, while Mr. L. H. Bogue, general superintendent, represented the builders on the work.



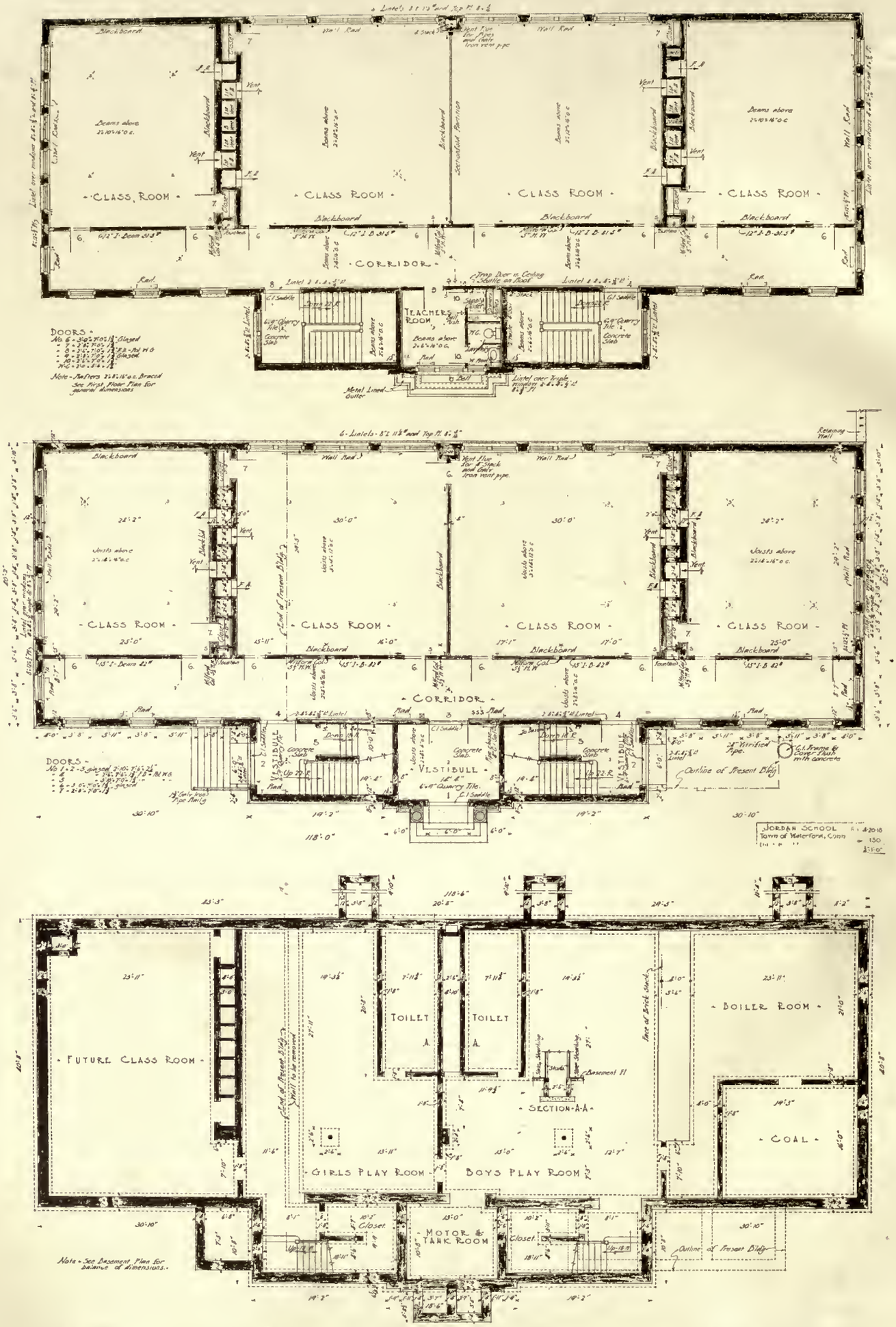
- FRONT ELEVATION - SOUTH -

- NORTH ELEVATION -

- WEST ELEVATION -

- EAST ELEVATION -

ELEVATIONS, NEW JORDAN SCHOOL, WATERFORD, CONN. Louis H. Goddard, Architect.



PLANS, NEW JORDAN SCHOOL, WATERFORD, CONN. Louis H. Goddard, Architect.

What a New York Club Did with Its Back Yards

By Edward C. Dean, Architect

THE little courtyard that is now the focal point of the enlarged Cosmopolitan Club was formerly the usual unsightly back yards of two old residences facing on Lexington Avenue. A high wall on the north party-line screens the adjacent property and forms the back of the vaulted loggia whose arched openings face the court. Adjacent to the loggia an open corridor with arches also giving on to the court brings one to the two little reception and waiting rooms that were formerly the basement kitchens of the old residences. All of the new construction is of common red brick laid with a band of narrow tile edge at every fifth course, projecting very slightly but quite irregularly beyond the surface of the brick wall. This gives a little shadow stratification that adds interest to the surface of the wall. All of the brickwork was finally given two coats of a pink whitewash stain. Old, irregular flagstones laid with wide joints in which grass has been planted form the paving of the yard. Flagstones were also used as copings to the parapet walls, and the irregular slates of the roofs were laid in a thick bed of cement without striking the joints, which gives the appearance of an old roof vibrating with shadow and color.

Lounging-room.

The walls and ceilings of all the courtyard rooms are finished in rough, whitewashed plaster with here and there an occasional dark-wood beam or a heavily panelled door to give accent.

Panels of old ironwork were utilized in masking radiator openings and elsewhere for decorative effect. The rough, whitewashed walls form a striking background for the old Spanish and Italian furnishings with their bits of old velvet and brocade. A dark floor of small, hand-made tiles in varying shades of earth colors forms an excellent foil to the walls and ceiling.

The loggia has a patterned floor of black slate with narrow white marble insets, and from its western end steps lead down into the large assembly-room under the old studio building, formerly a church, whose high, austere walls and Gothic details form the western side of the little courtyard. A marble fountain from an old villa garden in the north of Italy forms the central feature of the courtyard.

In this quarter of New York, congested with the traffic of the Grand Central neighborhood, it is a welcome release from the noise of the street to step into the seclusion of this little club with its reception-rooms and its quiet new library giving on to the courtyard, a yard formerly to be screened from view wherever possible and now the chief centre of attraction of the clubhouse.

BIND YOUR COPIES OF

ARCHITECTURE

The Title-Page and Index for Volumes 37 and 38, January to December, 1918, of ARCHITECTURE are now ready and will be mailed without charge to any subscriber upon request.

Address CIRCULATION DEPARTMENT

ARCHITECTURE

597 Fifth Avenue New York City

Rudolph Falkenrath, Jr., Architect, 414 Deseret Bank Building, Salt Lake City, would be glad to receive manufacturers' catalogues.

Lawlor & Haase, Architects, after 17 years' location at 69 Wall Street, New York, have moved to No. 15 West 38th Street, where they shall be pleased to receive samples for office display.

PRIVATE TEACHING

Personal and by Mail

IN ELEMENTARY AND ADVANCED DESIGN

RENDERING AND SKETCHING

By Prof. D. VARON, D. P. L. G. F.

Author "INDICATION IN ARCHITECTURAL DESIGN"

Prospectus on demand

309 Broadway, N. Y. C.

Tel. Worth 2946

CONSULTATIONS

Personal and by mail

COURT, COSMOPOLITAN CLUB, 133 EAST 40TH STREET, NEW YORK.

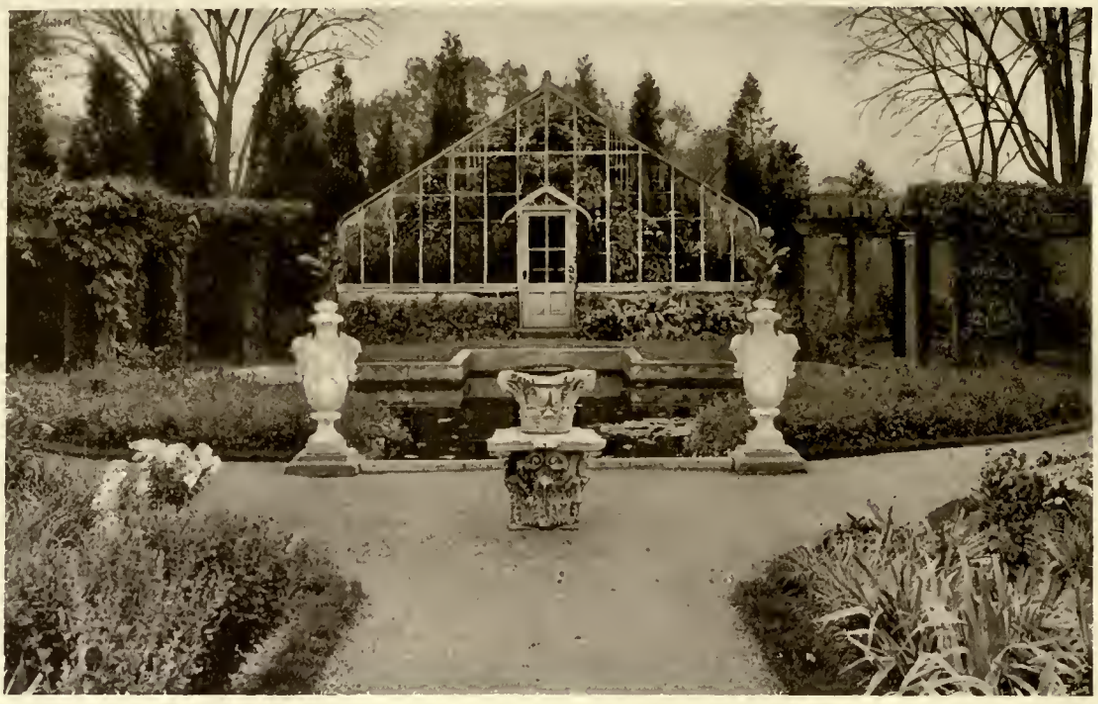
E. C. Dean, Architect.

LUNCHEON-ROOM, SECOND FLOOR.

LIVING-ROOM.

COSMOPOLITAN CLUB, 133 E. 40TH STREET, NEW YORK.

E. C. Dean, Architect.



U-Bar Greenhouses
As Now Sold by Their Builders

AS general builders of greenhouses, we have for fourteen years been building Pierson U-Bar Greenhouses.

Logically, we should best know how they should best be built.

In further continuing their building, the former standard of construction will be vigorously preserved in every detail.

Above all, they will not be cheapened in quality. The Pierson U-Bar Greenhouse bought from us will be the same superior greenhouse you have so long known it to be.

Even as certain high class automobiles indicate their owner's standing, so does the possession of a Pierson U-Bar Greenhouse.

Which fact may be responsible for one of their owners saying—"It is in the Rolls Royce class."

Send for catalog. Or send for us.

U-BAR GREENHOUSES

Hitchings and Company

1170 Broadway, New York
201 Devonshire Street, Boston

THE SECOND REFORMED CHURCH, BEAVER STREET FAÇADE, ALBANY, N. Y. Philip Hooker, Architect.

Restored by John L. Dykeman, 1918.

ARCHITECTURE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXIX MAY, 1919 No. 5

The Three Hooker Churches*

By the Late John L. Dykeman

THIRTY-THREE years (August 11, 1642) after the discovery by Hendrik Hudson of the magnificent river which bears his name, there arrived at the small but thriving trading-post called Beaverwyck, the Reverend

Old Stone Church formerly at foot of State Street.

1715-1806.

It included within its walls the site of a Church, the corner-stone of which was laid by Rutger Jacobson, 1656. Replaced by Church on Beaver Street.

Johannes Megapolensis, having been sent from Holland by the first (Patroon Kilian) Van Rensselaer, a merchant of Amsterdam, to minister to the colonists. Although Van Rensselaer never visited this tract of some 700,000 acres, which bore the name of Renselaerwych, after its owner, he early saw the need of a church for the prosperity of his colony; consequently he set about the adoption of the religion of the Reformed Church of Holland. This selection of the worthy domine proved a most wise one, as indorsed by the history left by both himself and his church. He not only ministered to the colonists in this unknown land amidst savages, and subject to all the privations of pioneer life, but he learned the heavy language of the Mohawks, and taught them as well, and this policy, instituted by him and pursued by the Dutch for the treatment of the neighboring tribes of Indians, not only operated to prevent disaster, but cemented a lasting friendship for which the colony was noted.

The first house of worship was a crude wooden one, built at the expense of thirty-two dollars, near the river, on the domine's arrival. The second building was built in 1656 at the intersection of Jonkers and Handelaars Streets, now State Street and Broadway. This building, built under the shadow of the fort, was built in the form of a blockhouse, and was fortified with three cannon and loopholed for muskets, as every worthy Dutch ancestor attended service with a musket at his hand, as did the Puritan of the New Englands.

In 1664 Fort Orange and Beaverwyck surrendered to

The Second Reformed Church, Hudson Street façade.

*NOTE—The following article was compiled from notes left among Mr. Dykeman's papers. His untimely and much-regretted death prevented the additions and revisions he had in mind. We believe the series of drawings, the first of which appear in the plate section of this number, will be welcomed and highly valued by every member of the profession.

the English, and again in 1674, after being recaptured and held for about a year by the Dutch. The English erased the Dutch name and called the place Albany, and in July, 1686, the town was incorporated under charter from Governor Dongan. In 1715 a church of stone was built around the old one without interrupting service.

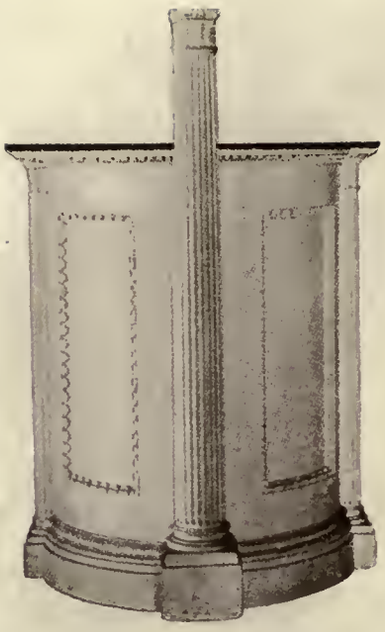
The congregation sent a request to Holland, the land of their birth, for both a pulpit and bell, which were furnished, and probably the weather-cock. The pulpit, with its delicate moulding and fine lines of the quaint hour-glass type, is a striking example of how little the people of Holland appreciated the conditions under which their more adventurous neighbors were living in this far-off land. The fact, however, that the pulpit is still in use in the First Reformed Church, also speaks well for the appreciation of the many who followed. Here General Washington attended service in the autumn of 1777. Both English and Dutch languages were used in the service until 1790 when the Dutch was discontinued. In 1797 the city of Albany was selected as the permanent seat of government for the State. This meant a boon for the town which then numbered some 5,000 souls. The church, too, had grown to such proportions that a much larger edifice was deemed necessary after one hundred and fifty years of the old one. Philip Hooker, a young man of prominence and ability, and just past twenty-one years, was selected as architect. The contractors, or "undertakers," as they were then called, were Hooker himself and another young man, one Elisha Putnam by name. The corner-stone was laid on June 12, 1797, and the building dedicated in January, 1799. The site was at the extreme north end of Pearl Street, which was the limit of the city at that time. The building, 72 x 144, was rectangular in shape, with an imposing dome entrance porch with both centre and side entrances. The side entrances opened with vestibules or stair halls, and then into the church itself, which was a very plain, flat-ceilinged and side-galleried room of large proportions. The galleries on three sides were supported by small columns. The light was obtained from two tiers of windows, the first square, and the second round-headed. A small stair at either corner on the front extended to both galleries and bell and clock towers.

Pulpit of the Second Reformed Church.

Interior, looking toward Hudson Street.

Interior, looking toward Beaver Street.

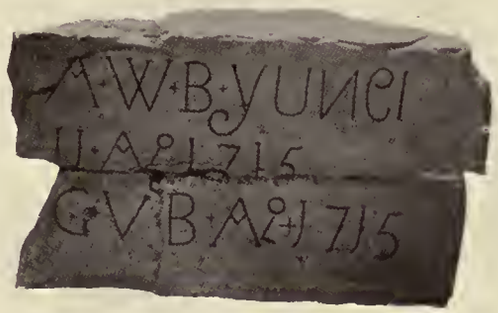
THE SECOND REFORMED CHURCH.



THE VOORZINGERS DESK IN USE IN THE BEAVER STREET CHURCH UNTIL 1835. LAST USED ON BI-CENTENNIAL SUNDAY, JULY 18, 1886, WHEN ELDER STEPHEN Mc C. LA GRANGE OFFICIATED AS VOORLEZER.

WEATHER COCK NOW ON THE VENTILATING TOWER OF THE MADISON AVENUE REFORMED CHURCH, FORMERLY (1656–1806) ON THE OLD DUTCH CHURCH, FOOT OF STATE STREET. MADE OF BEATEN BRASS; BEARS THE MARKS OF THREE BULLETS.

The pulpit taken from the old church was placed in the west end of the church facing the street. The pews were large, with side doors, and slightly raised from main floor. The interior, like the Dutch themselves, was of the simplest: plain trim, plastered walls and ceiling. And surely the architect must have been most persuasive to get these staid old mynheers to adopt his design for the exterior, which was in such contrast to what they were used to, and the church surroundings. The foundation was built of stone, partly from Fort Frederick, and the walls were of red brick laid Flemish Bond. The porch column pediment was of wood, as was the upper part of clocks and bell tower. The roof was slate, and on the minor end was placed three stone urns, serving, no doubt, as chimney caps. The entire church property, consisting of a small block, was surrounded by a high ornamented iron fence. Pearl Street was the north end of the town. There the town ended, and there lived the aristocrats of the ancient burghen. Of an early evening in mild weather one could see these ancient and venerable neighbors, with their little sharp cocked hats, or red worsted caps pulled tight over their heads, sitting gazing in silence toward this imposing church. The streets presented a very different aspect from that known to-day. State Street was an unpaved and grassy road, and each side was lined by quaint little Dutch dwellings, with gabled ends to street. The church must have made a great impression on the Dutchmen, sitting on the front door-step puffing on their pipes—striking contrast. Remodelled, 1820; built again, 1850.



THESE STONES WERE FOUND IN FEBRUARY, 1884, ABOUT A FOOT BELOW THE SURFACE OF THE PAVEMENT, ON THE S. W. CORNER OF THE OLD MIDDLE DUTCH CHURCH, ON BEAVER AND HUDSON STS. THEY WERE A PART OF THE MATERIAL OF THE OLD DUTCH CHURCH, FOOT OF STATE ST., DEMOLISHED 1806 AND WHICH ENTERED INTO THE CONSTRUCTION OF THE FORMER MENTIONED BUILDING.

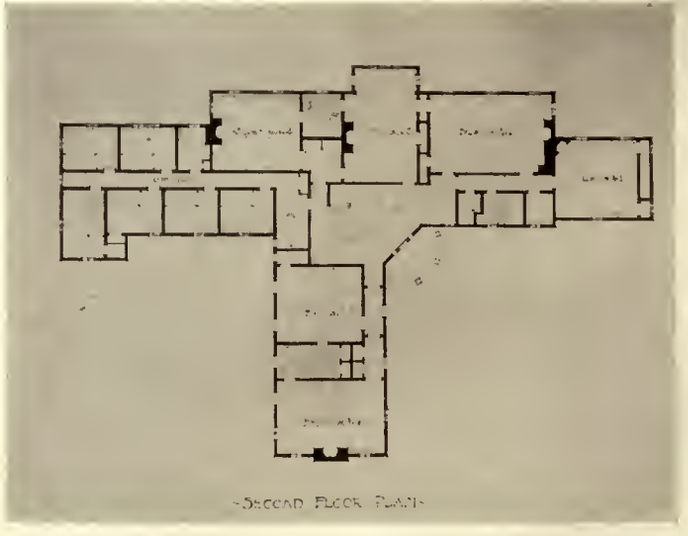
The Standard Documents of the American Institute of Architects

The American Institute of Architects issues the following standard documents: A. Form of agreement and general conditions of the contract; B. Bond of suretyship; C. Standard form of agreement between contractor and subcontractor; D. Letter of acceptance of subcontractor's proposal. The documents are published and for sale by the Institute at its headquarters, the Octagon, Washington, D. C., and by dealers in all of the large cities.

Announcement

The Portland Cement Association announces the return of Walter B. Elcock as district engineer in charge of the Atlanta office of the association, effective March 18, 1919.

Mr. Elcock has lately been relieved of his duties as major of Infantry and adjutant of the 157th Depot Brigade, at Camp Gordon. He was in charge of the Atlanta office of the Portland Cement Association when he entered military service in March, 1917.



HOUSE AND PLANS, HENRY C. PERKINS, HAMILTON, MASS. Lynch Luquer, Architect.

MANTEL.

STAIRCASE.

PORCH.

HALL.

Lynch Luquer, Architect.

HOUSE, HENRY C. PERKINS, HAMILTON, MASS.

Comparative Characteristics of Materials and Construction for Walls of Small Houses

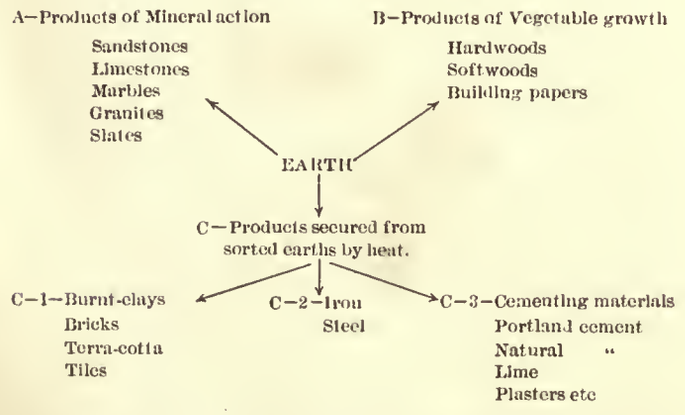
By H. Vandervoort Walsh

TO the average architect who must determine the kind of material which he will use in the walls of a country house, the difficulties of a choice often seem very great, especially when a client demands exact facts by which the architect is governed in his selection. He must arrive at some one conclusion, and this is often done by an intuition founded upon long practice and experience; but it is very hard to give reasons for such methods, and a younger man is not apt to have any intuition in this line at all.

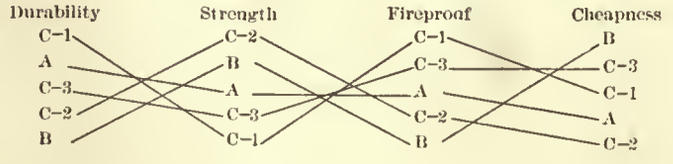
These exterior walls are primarily intended to keep out the excessive changes of the elements. In them must be materials and methods of construction which will offer the greatest resistance to the transmission of heat and dampness. As air spaces have been found to be the best insulator for this purpose, it will be necessary to provide them. The outer face of the wall will have to stand up against the beating of rain and snow, the freezing of winter and the heat of the sun. This means that some kind of material must be used which will have weather-resisting character. On the other hand, the walls must support the loads of the roof and the floors, and if possible they should be fireproof. Coupled with all of the above requirements, cheapness, economy, and beauty must be recognized.

Likewise upon the kind of material which is selected is determined the kind of foundation walls that will be used. These must harmonize with the upper walls. For instance, a beautiful cut-stone house would look very out of place on a foundation of rubble-stone, brick, or concrete blocks.

To guide him in his selection, the architect can follow some very general observations which can be made upon the materials with which he can build. He will notice that the earth supplies just three kinds of building materials. These are the products of vegetable growth, like wood and other fibrous plants, also the products of mineral growth, like stones and slates, and then those products which are made from sorted earths by heat, like bricks, terra-cotta, cement and lime, and metals like iron and steel. For clearness of classification the following will give a fair idea:



Now if we compare these classes in a very general way, we can come to some very general conclusions.



This table considers the materials as a unit of construction. Many will say, "how is it that woods are considered stronger than brick or terra-cotta?" The answer will be found in the building codes. Brickwork and terra-cotta are allowed no tensile stresses at all, and with the best Portland cement mortar brickwork is allowed only 250 pounds per square inch, and hollow tile 100 pounds. On the other hand, the various woods which are used for framing are allowed from 600 to 1,200 pounds per square inch in tension, and from 800 to 1,400 pounds per square inch in compression. It is quite true that a brick in compression will sustain a load of 3,000 pounds per square inch, and that the crushing strength of a cube of terra-cotta is 6,000 pounds per square inch; but this is without regard to its relation to the building. In other words, the table describes, in a way, the general possibilities of the various classes of materials in wall construction. From it will be seen that classes C-2 and B, which are so deficient in durability and fireproof qualities, but so superior in strength, are excellent materials for framing, where they can be protected by other materials of more durable nature. That this is recognized is evident in the use of steel frames in city buildings, which are protected by brick, concrete, and terra-cotta coverings. In the case of wood, though, another factor is present which has disturbed this logical use of materials, namely its cheapness. We have the result of wood construction used both inside and out. But as the price increases a decided tendency is prevalent to use wood only as a framing material, and cover it with a veneer of brick or stucco, which are of more permanent natures. This is a logical development, and ought to be encouraged. It is just the same logic that makes the architect use stucco to cover buildings that are framed with "pressed steel lumber."

Another very general observation that can be made is that if a material is cheap and its durable qualities are deficient, then in all probabilities it is cheap only in its initial cost, and not in the end. It is quite necessary to paint a wooden house about every four or five years. For the average ten-room house this means an expenditure of about $200 at these regular periods. Even in spite of this, if the joints of the trimming have not been put together with white lead, repairs will be necessary. When all is taken into consideration, it is not difficult to see the answer. However, if cypress shingles and white-pine siding could be used, the story might be different, but the price of these is now high enough to make a house of this material and one of brick not much of choice either way from an economic standpoint.

In this same connection, the architect should not let himself be deluded into the belief, as some manufacturers would have them, that a house with walls of brick or hollow tile is more fireproof than a wooden house. The difference is so slight that if either one got on fire, the best thing to do would be to get out as quick as possible and ring the alarm. A difference of material on the exterior walls, if the interior remains the same, will not change the fire-resisting qualities of a house much. Of course, when a wooden house burns down, the walls do not stand to tell the tale, but then what good is a charred wall of brick if the inside is gone? It is true that it makes it a safer house

from attack by fire from the outside, but then it is only as safe as the windows, and it does not take long for these to shatter if the house next door is burning with very great heat. Why not admit that a choice of many a brick or terra-cotta house has been made on this notion?

As materials are closely related to the types of construction used, it is quite necessary to make some general observations in these lines to help in the final conclusions. In order to build with any of the materials mentioned, they must be converted into units of construction like blocks, posts, beams, and sheets, or slabs. Classes B and C-2 are more adapted to sheets, posts, and beams. Wooden blocks or steel blocks for building are unheard of. Now these units of construction require nails or rivets to hold them together when they are erected in a wall. On the other hand, classes A and C-1 are readily adapted to block units, and require class C-3 to bind them together into a wall. When class C-3 is used entirely alone, it is adaptable to poured construction, or block construction, and is in reality the only class of materials which can be used in a plastic state. From the above analysis, the structures made of wood and steel are only as strong and as durable as the nails and rivets which hold them together. Those walls which are made of stone, brick, and terra-cotta are only as durable as the mortar which fastens them together. Those walls of concrete are only as durable as the cement is, for it is rare that the aggregate is of shorter life, if it has been carefully selected. In other words it is not necessarily the durability of a material which determines its life in the structure. What does determine this is how long will the nails last, and for how many years is the mortar good as a binder in the wall? As a matter of fact the nails in a wooden structure outlast as a rule the wood, but the mortar in a brick wall does not outlast the bricks. Although we can say that terra-cotta and bricks in themselves are practically indestructible, it would be foolish to think that a wall built of them is so permanent. That is the reason we have tables like the following:

	APP. LIFE IN YEARS
Cheap frame construction, wood covering	40–50
Good frame construction, wood covering	45–55
Good frame construction, stucco or brick veneer	55–66
Brick, terra-cotta, stone and ordinary plain concrete	66–75
Reinforced concrete construction	75–90

It is not very difficult to understand that, if we can secure a large but light unit of construction in any material, we will automatically reduce the labor necessary on it. For instance, wood is capable of being converted into long light timbers, and long thin slabs. The labor to nail together a framework of it, and cover the same with sheathing boards, is certainly very much less than would be necessary to spend on any other system of construction, except the poured system of concrete, where the same moulds can be used over and over again. The same conclusions can be drawn in regards to the difference in cost between a clapboard and a shingle-covered frame building. The clapboard in every case is cheaper. Likewise a hollow terra-cotta tile wall, where the units are large, say 8″x12″x12″, is certainly going to cost less in labor than a brick wall 10″ thick with a 2″ air space. Not only are the tile units larger, but the air space is built by the material itself. The same argument will hold true with certain patent tile bricks, where the units are larger and the whole width of wall is built at once; but these tile bricks step one bit further toward economy, for, unlike tile, they finish the face of the wall and do not have to be covered with stucco.

This leads to another general consideration of the systems of construction in respect to the air space that is so essential to the outside walls. This is the cheapest and the best non-conductor of heat and dampness there is. In winter it keeps the heat in; in summer it keeps the heat out; in damp weather it keeps the dampness from penetrating. In all wood-frame construction this air space is between the sheathing and the plaster, but due to a certain amount of leakage it is not kept motionless or in a state of slow circulation, with the result that its value as an insulator is reduced. However, if proper floor stops are used and a good grade of building paper applied to the sheathing boards, much of this leakage will be stopped, and warmth and comfort will result. For the same reason stucco on a frame or a brick-veneer house is warmer than an ordinary frame dwelling. In fact, many persons prefer a veneered building to a solid brick one, because they are less apt to be damp, since the air space is wider. No stone, brick, or concrete building is safe to live in which, having solid walls, has no furring on the inside to form an air space between the back of the wall and the plaster. Compared to the veneered frame dwelling, where the air space is 3½″, only about an inch can be secured with the ordinary furring strips. All such blocks as hollow terra-cotta and concrete were designed to eliminate the cost of making this air space by furring, but nearly all cases are defeated by poor understanding of construction. For instance, terra-cotta blocks are in themselves damp-proof, but if they are put together with mortar which is not waterproofed, and which extends in the joints from the outside to the inside, the dampness will follow through the mortar, and in order to prevent it appearing on the plaster surface of the inside, an air space will have to be furred off. This, of course, defeats the very thing that the block was designed to avoid. Certain styles of blocks are so designed that the horizontal mortar joints are not continuous through the wall, but the vertical joints are not considered. The only real solution is to butter the outside and the inside edges of the blocks with mortar, so that, as far as possible, no mortar will extend through the wall, and then, in addition, the mortar should be waterproofed. The same difficulty is encountered with the concrete block. The average block is made by the dry, pressed system, and it is as porous as a sponge. In fact these houses in wet weather are damper than any other type. A concrete block made by the wet, poured system can be waterproof, though, and if the joints are also waterproof, and the block is of the hollow type, furring may be omitted. In any masonry wall moisture will be drawn up from the ground, and also drip down from any copings. Waterproof membranes of Portland cement, mortar, or pitch should be extended through the entire width of the wall just above the ground level and below the roof level, if roof does not overhang the wall.

Another factor which goes toward determining the economic value of a material is the simplicity of the structural system, into which it is convertible. The more machinery and the more unskilled labor that can be used, the cheaper will be the construction. Poured concrete has considerable advantage in this line, for a machine mixer can be used, one skilled foreman, and a large body of unskilled labor. However, in order to secure economy from this advantage in the small house, it is necessary to have standard moulds which can be used over and over again. This is quite out of the question except in large communities of working men's houses, where duplication is resorted to. Many experiments have been tried by which the cost of moulds can be reduced. One of the cleverest was the

moulding of the side walls on the ground, as if they were sidewalks, and then when they were hardened, lifting them to position by cranes, but the latter operation proved so expensive that it destroyed the profits of the former, unless work was done on large scale of fifty or more houses.

At this point a general outline of the various types of construction and the materials employed will suggest what things must be decided upon in any consideration of them. They all affect the cost one way or the other.

FRAMING SYSTEMS

1. Wood as the framing material.
   - Kind of Wood?
   - Combination or balloon frame?
   - Covered with:
     - Clapboards?—wide or narrow?
     - Shingles?—large or small?
     - Stucco?—metal lath, wood, etc.?
     - Brick veneer?—2″ or 4″ way?
     - Cast cement slabs?—finish and thickness?

   } With or without sheathing, building paper?
2. Pressed steel as the framing material.
   - What kind of metal lath?

BLOCK SYSTEM

1. Bricks.
   - Solid or hollow? Quality of face brick? What kind of lintels?
   - 8″ or 10″ or 12″? Kind of joints?
   - Kind of bond? Furred?
2. Hollow terra-cotta blocks.
   - What make? Stucco or brick veneer? What kind of lintels?
   - 8″ or 12″? Furred?
3. Stone.
   - Cut stone or rubble from the site? Kind of surface finish?
   - Kind of jointing? Furred? What kind of lintels?
4. Concrete block.
   - Pattern? Finish? Furred? Joints? What kind of lintels?
   - Poured wet process or dry pressed process?
   - Waterproofed?

POURED SYSTEM

1. Plain concrete.
   - Kind of aggregate? What kind of lintels?
   - New or standard moulds?
   - Finish? Waterproofed?
2. Reinforced concrete.
   - Kind of reinforcement? What kind of lintels?
   - New or standard moulds? Finish?
   - Kind of aggregate? Waterproofed?

} Precast or cast in position?

This outline indicates what points must be settled upon in each case, when a comparison is made. It will be noticed that the kind of lintel used is very important in all. Brick or stone arches, false brick and stone arches braced with wood or steel beams, reinforced concrete lintels or tile lintels containing a core of reinforced concrete in their air cells are the commonest types that can be used. The first types are the cheapest, where wood is used to brace the arch a slight saving over the first might be made, but where steel is used it is more costly. Where much concrete is used the reinforced beams are the next cheapest, but the reinforced tile beams are cheaper where tile is used in the main construction. The most expensive type of lintel is the steel lintel, where all the weight is carried on it.

In regard to the base which should be selected for a stucco finish, the extensive tests which have been carried on by the Bureau of Standards of the U. S. Government give the following results. Stucco on monolithic concrete and brick stands the best, next is stucco applied to metal lath, which has been fastened to a wooden frame by crimped furring strips and back-plastered, then hollow terra-cotta tiles and wood lath on a wood frame. The type of stucco construction on metal lath and back-plastered, with the omission of sheathing-boards, has a decided appeal as a logical type for wood-frame construction.

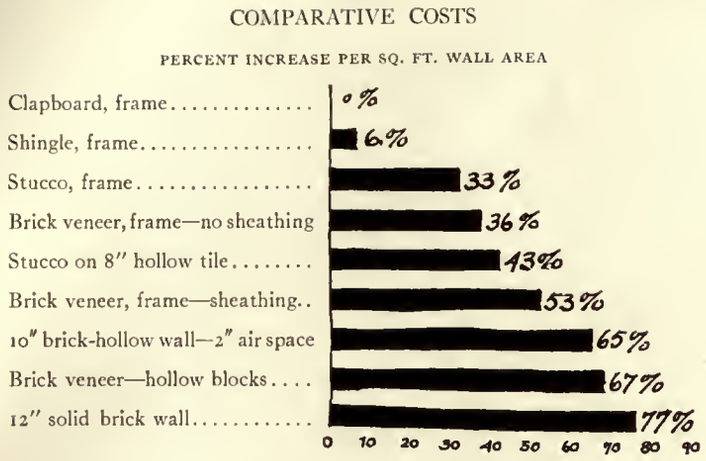
An actual comparison of the costs of these different materials and construction have been made from time to time, but they do not prove anything in detail. Initial cost cannot be the only criterion. There are other factors which enter in, like insurance, maintenance, depreciation, fireproof character, etc. A certain amount of common sense must be exercised in making the decision. Every manufacturer claims, and is going to claim, that his material is the most durable and cheapest in the end. Cement-makers insist that concrete is superior to other forms of construction, the hollow-tile makers set up the same argument for their products, and the lumbermen claim the wooden house still is first. All are able to show facts and examples and cost data proving their case.

The reason that they are able to argue the cost proposition so closely will be revealed by a careful study of the conditions. It will be noted that the actual difference in the total cost of a house of ordinary size is not so materially effected by the different varieties of materials used in the construction of its exterior walls. From 1 to 13 per cent of the total cost is all the increase that one type has over the other. Approximately, a brick house with a 12″ solid wall is 13 per cent higher in cost than the same in wood frame, covered with clapboards. This means, a house of wood costing about $7,000 would be increased by $810 if the walls of it were built in brick. When the depreciation on the two is compared, and paint bills counted up, the final race is very close. Here is what the insurance companies have discovered:

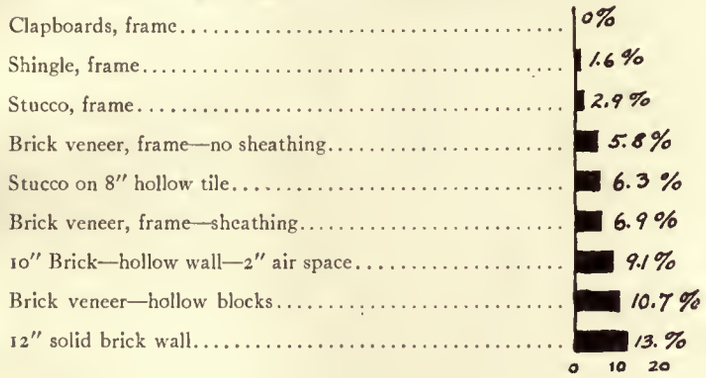
	FRAME DWELLING AVERAGE LIFE IN YEARS	BRICK DWELLING AVERAGE LIFE IN YEARS
Brick	..	75
Plastering	20	30
Outside painting	5	7
Shingles	16	16
Cornice	40	40
Weather-boarding	30	..
Sheathing	50	50
Doors	30	30
Windows	30	30
Hardware	20	20
Outside blinds	16	16
Sills and first-floor joists	25	40
Dimension lumber	50	75
Porches	20	20

But after looking at this table how easy it is to find exceptions! There are plenty of wooden houses in first-class condition, which have stood for centuries, and if the architect hasn't seen them, the lumbermen have been sure to send him photographs. The same is true of brick houses, but we forget the thousands which have been torn down and abandoned, and the cities of them that have been consumed by fire.

Nothing more than general conclusions can be drawn from a comparison of costs per square foot for various types of construction, for we find that it costs about 1.6 per cent more to build with shingles than with clapboards, where we take the percentage on the total cost of the building; but if we take a square foot of clapboard-covered frame wall, and compare it with a square foot of shingle-covered wall, we will find that the shingle wall costs about 5.3 per cent more. This seems like a very great difference when considered alone and without reference to the other comparison. The diagram shows the two charts side by side. It is not difficult to see that an argument could be favorably started by either one to prove points quite opposite.



Note:—The cost of stone and concrete depends too much upon local conditions to chart.



Note :—The difference is comparatively small, when viewed from this angle.

Where the real difference of cost occurs is in the treatment of the interior. For instance, a frame house costing $10,000 will cost nearer $15,000 if it is made fireproof throughout walls, floors, and roof; but if the walls are only made fireproof with, say tile, the cost will be only about $10,500. Yet the latter small difference could be used for an argument to build a fireproof house, which really was not fireproof.

Another factor which cannot be eliminated in making a choice is the location and climate where the building will be erected. There are many places where a rubble-stone building will cost less than any other type of masonry construction. On the other hand, there are localities where stone is lacking, but great quantities of sand are present, which would make concrete construction the cheapest form. The locality also affects durability. Wood houses will decay quicker in warm, damp climates like Alabama than in dry climates like Wisconsin. Stucco, which stands well in climates like California, will disintegrate badly in climates like New York. Any detailed rules on selections along this line would be out of the question. All that can be said is that the use of local materials in general leads to economy.

Now as a suggestion for applying the facts stated in this article, the following questions should be answered of any materials under comparison:

1. Cost of material per square at local prices?
2. Cost of labor per square at local prices?
3. Relative durability?
4. Relative strength?
5. Relative fireproof values?
6. Relative beauty for particular purpose?

This little set of comparative questions should not be looked upon as a hard-and-fast rule, but it is merely an aid to the judgment. To use it, each question should be answered on a percentage basis for each material under comparison. For instance, the material which cost the less per square at local prices will be rated under question one as 100 per cent, and then the other materials will come in order according as they compare to this basis. The same will hold true for the second question. In other words, cheapness is a quality which is to be desired in the selection of a material, and economy of setting is also a good quality.

When a comparative set of percentages is to be made for questions 3, 4, and 5, the facts in this article will aid the judgment. However, to answer No. 6, taste alone will decide. Now, when each material has been given its relative rank in respect to each question, a grand total can be made, and the material with the highest total can be considered the winner. This ought to be conclusive enough answer for the most fastidious client who asks the architect why he selects one material in preference to another.

However, a little common sense must be used in connection with this method of comparison. It is not a mathematical formula. The whole result could be thrown out if such a foolish thing as the following were placed down as the comparative values for a brick and a frame wall with respect to their fireproof characteristics. The house is to be built of wood throughout, but it is a question of whether the walls are to be made of brick or wood. In answering question 5, the brick wall was given 100 per cent, while the wood wall was considered 0 per cent. Now actually under these conditions, as has been stated before in the article, the brick wall is not that full 100 per cent better from a fireproof point of view, because all that it can do is to protect to a certain extent the danger from exterior fires. If, therefore, it is rated at 100 per cent, common sense would say that the wood wall ought to be rated at about 75 per cent. Of course, if the interior is made fireproof, then the brick wall could be rated at 100 per cent, and the wood wall at 0 per cent.

In making these comparisons one must not forget, too, that there are good and bad woods, bricks, tiles, and cements, and that there are good, bad, and indifferent ways of doing the same thing.

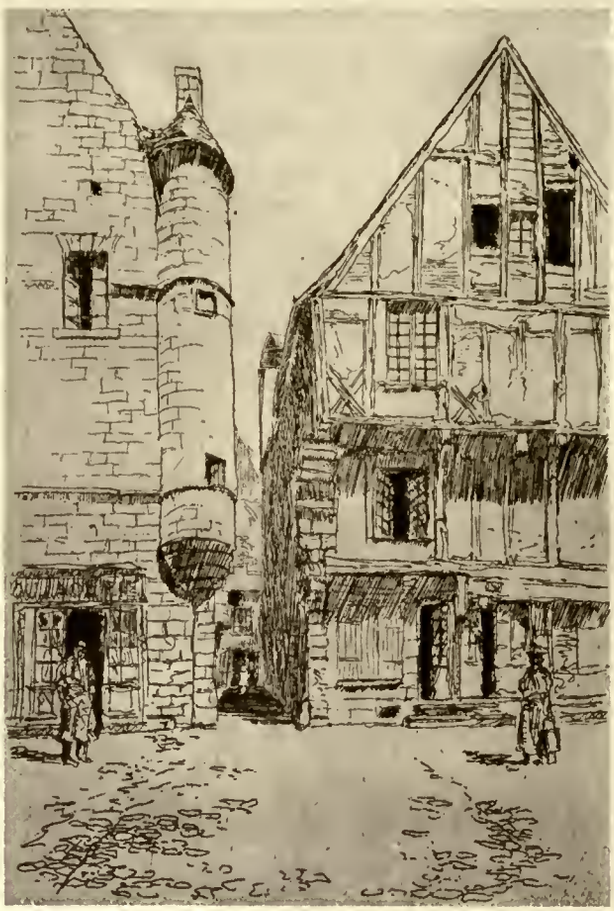
Book Reviews

THE LAND AND THE SOLDIER. By Frederic C. Howe. 12mo. $1.35 *net*. Charles Scribner's Sons, Publishers.

The problem of homes is acute, for our returning soldiers, as well as for those who stayed at home. And just now the pressing question is the finding of occupation, opportunity, and a future for thousands of men who are returning to civil life from overseas. "Back to the land" is a slogan that has a charming idealistic connotation; but where and how, are questions of hard fact that can be solved only by looking at them with direct vision. The establishment of Farm Communities or Colonies is the topic of Doctor Howe's interesting book and he points the way to a thoroughly practical development of the idea. "There is land enough to support millions of farmers and feed many millions more in the city."

To architects the planning and designing of these Farm Communities for soldiers should offer many opportunities. Doctor Howe's book points a way to the solution of one of our greatest present-day problems. Our town planners and architects everywhere will find this book worth while.

HIS FIRST PLATE.



IN NORMANDY.

VENETIAN IMPRESSIONS.

THE OLD CLOCK TOWER.

SOME EXPERIMENTS IN ETCHING BY MR. LESTER E. VARIAN, ARCHITECT, OF DENVER, COL.
HE SAYS HIS "PRESS" WAS THE HOUSEHOLD CLOTHES-WRINGER.

Editorial and Other Comment

A Good Investment Under Present Building Conditions

IF the cost of materials is not to be appreciably lower and labor has been placed permanently on a higher basis, while the demand for both city and country homes is far in excess of the supply, just why should there be any reason for longer delay in a general campaign of building? Certainly the architects are not lacking in readiness to proceed nor in a knowledge of conditions, and the best way to meet them, from a practical point of view, in economical methods of construction. It is evidently the man with capital, large or small, who is hard to convince that there is no use in waiting. There would appear to be ample and convincing arguments at hand, available to the architect, for proving the fallacy and the wastefulness of losing the present opportunities while waiting for a problematical future, for a return to prices that all authorities unite in saying can never come again. New York, and practically every city in the country, is confronted with rent strikes, with open rebellion against what they consider rent boosters, to which the owner of property replies that it is only a question of supply and demand. Apparently the only antidote to this condition is the immediate building of more places where people can live.

As rents have gone soaring, there is no place left for the family of moderate means, the kind that usually pays its rent and looks upon the small house or apartment as a home. If private capital does not see its way to go on with this crying need for homes, it is not at all unlikely that the matter will become a question of State or municipal undertaking. There is no question of philanthropy in the matter, for figures are available to show that there are few better investments than the small house or small city apartment. From a recent report made by Henry Atterbury Smith of the Open Stair Dwellings Company we quote the following significant figures:

"The Open Stair Dwellings Company has erected two excellently built units at 210 and 211 West 146th and 147th Streets. They were opened on time, November 21, 1917, and February 20, 1918. Two hundred and sixteen families have been sheltered for about a year. The funds were provided by 28 stockholders, 20 of whom are stockholders also of the parent company. This result was accomplished in spite of war conditions. The war increased the demand for housing but at the same time absorbed funds for more pressing purposes which might have been invested in tenements. The buildings under these trying circumstances only cost 2½ per cent more than the cost submitted to each stockholder August 12, 1916. Each home is provided with steam heat, hot water, electric light, gas-range, laundry-tub, kitchen-sink, dish-cupboard, and one, two, or three ample closets. All rooms have windows to the fresh air and nearly all the suites have cross ventilation, that is, two exposures. A kitchen large enough for use as dining-room as well, a living-room, and a bath-room rent for $4.25 a week. Some suites have one additional bedroom, some two, the rent being $5.15 and $6.50 respectively.

"The earning capacity of these two units and obligations existing are summarized thus:

Mortgage interest and 5% dividend	$21,750
Maintenance	24,556
Reserve to reduce mortgages	5,694
Rents received per year	$52,000
Stock 5%	$182,000
Mortgages 5½%	230,000
Total obligations	$412,000

"This includes carrying a plot 216 x 200 ft. vacant, assessed at $90,000, for which we paid $78,000, an expense of $6,500 per year. On January 6, 1919, each stockholder received 1 per cent in cash and 5 per cent interest in stock from the date of his subscription. This increased the stock issue from $163,600 to $182,000.

"In the course of the year we should be able to resume our work and complete the development with two final units separated from the present pair by a permanent park-playground 100 feet by 200 feet, directly opposite the beautiful new public school. This space will insure light and air to our tenants and provide a much-needed open space for the community. It will call for additional subscriptions of $190,000, upon which, together with the original issue, we hope to be able to declare 6 per cent annual dividends, thus:

Mortgage interest and 6% dividend	$45,970
Maintenance	45,926
Reserve to reduce mortgages	12,104
Rents received per year	$104,000
Stock 6%	$372,000
Mortgages 5½%	430,000
Total obligations	$802,000

There Should Be More of Such Enterprises

THERE is on foot a great building project for New York that promises a beginning of similar enterprises elsewhere toward solving the particularly and universally insistent housing problem. The proposed plans include a huge building that shall include family apartments, club-rooms, assembly-halls, restaurants, cafeterias, stores, and studios for artists and musicians. The idea comes from Mr. Lewis Stockton, a Buffalo lawyer, who is well known in his home city for his practical interest in public affairs. The plan has the support of a group of distinguished New Yorkers known for their knowledge of housing conditions and the present needs of hundreds of small families, students, and teachers who are finding the problem of living in the city one not only of difficulty but actual hardship.

Alfred E. Marling, the President of the New York Chamber of Commerce, has appointed a committee to investigate the problem of financing this big project. The amount involved is something over six millions of dollars. There are some features of the scheme that may savor of what the hard-headed business man will probably call the dreams of an idealist, but Mr. Stockton wants it distinctly understood that there is no least idea of philanthropy involved. On the contrary, the whole scheme is based on strictly business possibilities. The city housing problem is

one that seems to be chiefly related to the welfare of the wage-earner and the salaried man, the man who cannot hope to earn his own home in the city, but who must buy his living space under present crowded conditions, not on the basis of a fair profit to the owner of property, but on the basis of supply and demand; in other words, he must compete with the highest bidder.

In New York, where studios and small apartments were built primarily for artists and professional men, the demand from people who look upon the studio as providing a pleasant "artistic atmosphere" in which to entertain their friends has taken them away from the possible occupancy of the original tenants for whom they were ostensibly built.

Reduced Wages Not Necessary to Resumption of Building—Contented Labor a Great Asset

THAT a reduced wage-scale is not an indispensable preliminary to resumption of activity in the building trades is the opinion of Morton Chase Tuttle, who has been for more than a year production manager for the United States Emergency Fleet Corporation. Mr. Tuttle bases his judgment on some very recent investigations of large construction enterprises located at various points from New England to Florida, supplemented by careful studies carried out under his direction in Boston. These unmistakably indicate that increased efficiency of labor is bringing down costs even while wages remain at existing altitudes.

"It may well be urged that state of mind is often as potent a factor in ultimate labor costs as is the rate per hour. Any one experienced in handling workmen has recognized the difference in output between a cheerful capable man, anxious to hold his place, and one who is a little disgruntled, and quite conscious that he can get another job the moment he drops the present one. Multiply either case by thousands of individual instances, and I believe that there will be found, in shifts of mental attitude, the explanation of much of the variation which occurs in unit cost. And this, after all, is the element of labor which directly affects the profits of the employer."

A Most Important Meeting of the Institute

THE fifty-second annual convention of the American Institute of Architects held at Nashville this year offered an opportunity for much constructive discussion and the placing of the Institute on record as a progressive and thoroughly up-to-the-times organization. War conditions put to the test many old methods and traditions and no doubt made evident the necessity of some revision of certain rules of practice. There has been a good deal of more or less captious criticism of the Institute's old ideals. Some have even said that they are out of date in a world that has ceased to be governed by "a gentleman's agreement." But we believe that such an agreement never had a better opportunity of being respected among members of the profession, and that the influence of the Institute upon the general welfare of the profession, recognizing changed conditions, may be of inestimable value. Something more mordant, more measurable in fixed terms, less left to the rule of thumb, seems to be needed, together with a frank recognition that architecture has, like so many other things—leagues of nations, etc.—become more comprehensive and primarily a business proposition. One of the discussions before the post-war committee on architectural practice that every one will be especially interested in is that in regard to competitions.

"It has been said that a profession whose members are willing to compete with each other for employment can never occupy as authoritative or distinguished a position as one whose counsel is directly sought from its members according to their known qualifications.

"It has been charged that the architectural profession is suffering the consequences of having officially countenanced competition as a means of selection—that competition involves economic waste and is fundamentally unsound—that the comparison of drawings produced without the benefit of personal consultation or co-operation with the interests that are to use the building when built tends to confirm the belief that architects are primarily picture-makers and that the owner's interests do not demand contact with the architect.

"On the other hand, it is claimed by friends of competition that an architect comes out of a competition a better architect than when he entered it (whether he be winner or loser)—that where the recommendations of the American Institute of Architects are observed the limits of cost are fixed by limits of content, the competence of competitors established by examination of previous performance and judgment by a technical jury guaranteed; a competition becomes a postgraduate thesis of great value to the profession and no greater economic waste than any other form of education."

Better Housing

"IN this State," says Governor W. L. Harding, of Iowa, "we have said by statute that a dollar can never be loaned legally for more than 8 per cent.

"We have also said by statute that a man is entitled to a safe place in which to work. By a safe place in which to work we mean plenty of light, fresh air, and guarded machinery. Both statutes have been declared constitutional, not only in Iowa, but generally, and are upheld by public opinion.

"The family is more sacred than the dollar. The health and comfort of the family are as vital to the welfare of the State as that of the dollar, or of the man or woman who toils in a factory. A safe place in which to work is vital, from the standpoint of the laborer, and a safe place in which the family is to live is vital to the State.

"For the protection of society we have announced two great fundamental principles: first, the dollar cannot be legally loaned for more than a given amount; second, the laborer is entitled to a safe place in which to work.

"The third great principle that ought to be announced is that the family should have the right to live in a house the rent of which shall not net the dollars of the owner more than a fixed amount, and that it be a safe place in which the family shall live—that is, that there be plenty of light, air, and a plot of ground. If the first two propositions are sound, and they are, then the third is sound.

"The home is the foundation of all social improvement and betterment. The State is vitally interested in the generation of to-morrow. It can largely shape the moral and intellectual fibre of the next generation and generations by proper and right legislation for home surroundings. This means, first, regulation of the tenement-house, both as to conditions surrounding same and rent.

"Now is the time to act in Iowa on this great question. Delay is expensive in dollars, man-power, and motherhood efficiency. The man of the palace is as vitally interested in this problem as the man of the hovel. As the solution of this problem is delayed, society and the State pay the bill in broken manhood and womanhood. The legal questions involved and the right of the State to act are both well settled. Courage to face the issue and efficient leadership are the call of the hour."

RESIDENCE, HERBERT H. LEHMAN, PURCHASE, N. Y.

Harry Allan Jacobs, Architect.

HALL AND STAIRCASE.

LIVING–ROOM.

Harry Allan Jacobs, Architect.

RESIDENCE, HERBERT H. LEHMAN, PURCHASE, N. Y.

WHITTLE SPRINGS HOTEL AND CLUB-HOUSE, KNOXVILLE, TENN.

Barber & McMurry, Architects.

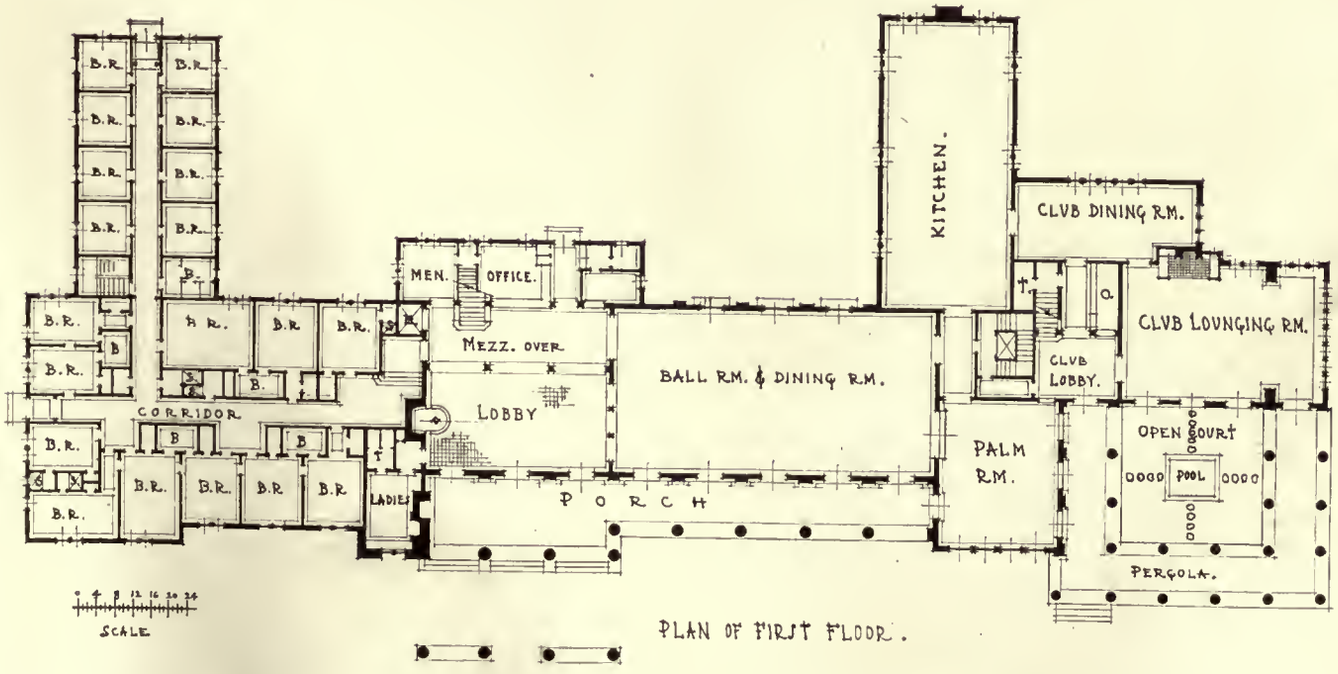
BALL AND DINING ROOM, FACING LOBBY.

HOTEL LOBBY.

Barber & McMurry, Architects.

WHITTLE SPRINGS HOTEL AND CLUB-HOUSE, KNOXVILLE, TENN.

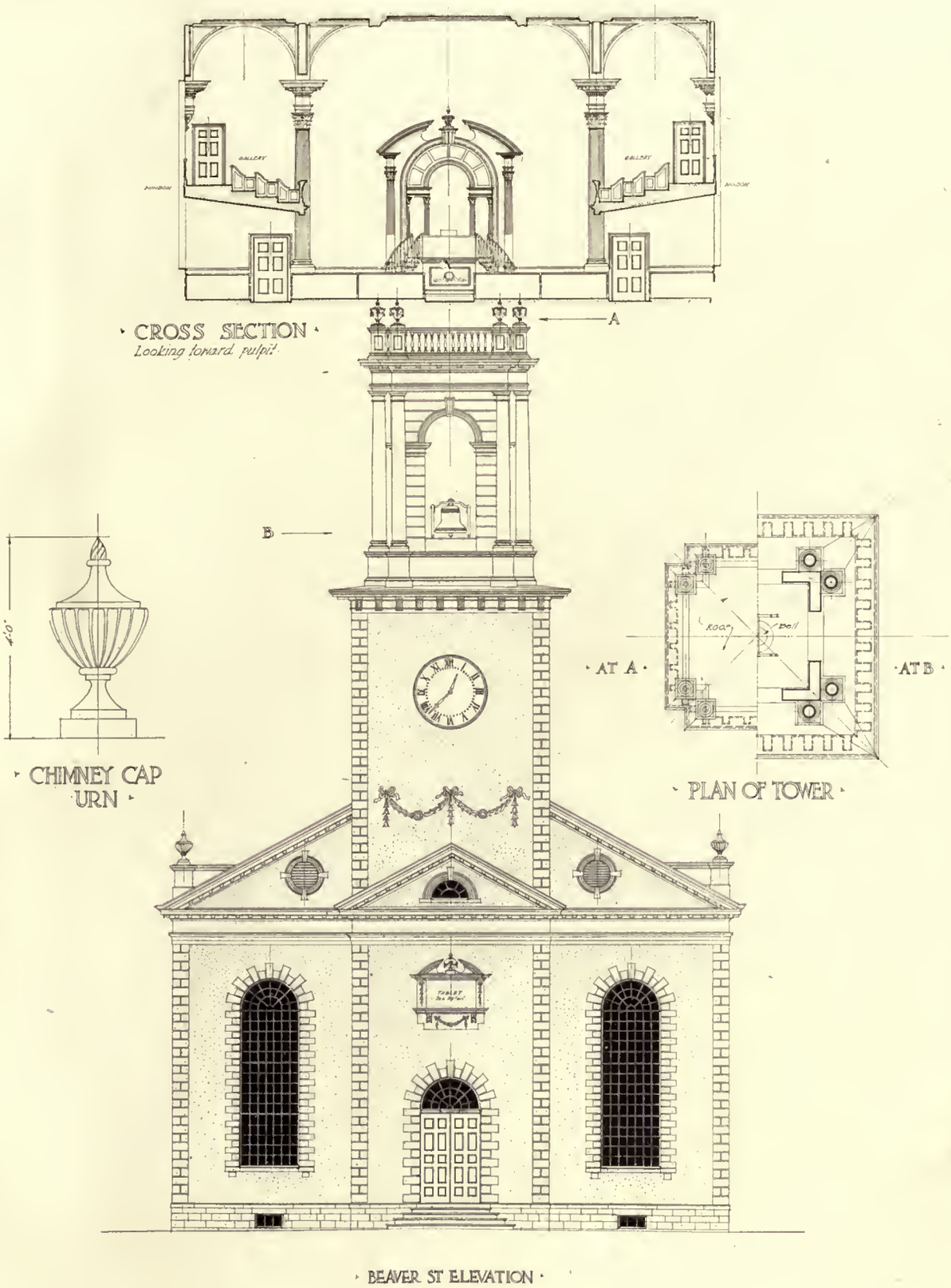
CLUB DINING-ROOM.



PLAN OF FIRST FLOOR.

WHITTLE SPRINGS HOTEL & CLUB HOUSE. KNOXVILLE, TENN. BARBER & McMURRY, ARCHT'S

MAIN ENTRANCE, RESIDENCE, MRS. FRANK E. DODGE, STONINGTON, CONN. H. B. Little, Architect.



CROSS SECTION
Looking toward pulpit

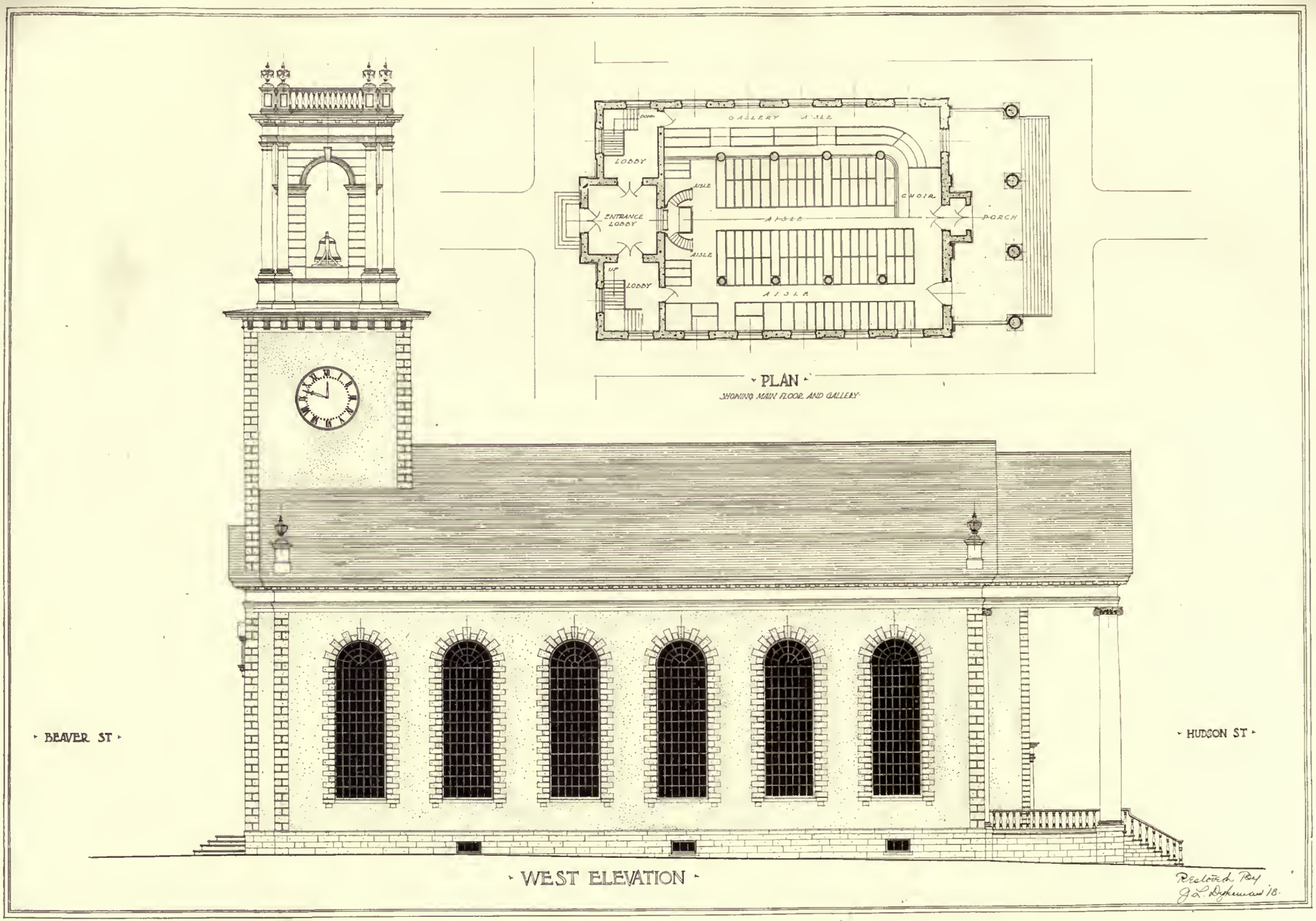
CHIMNEY CAP
URN

PLAN OF TOWER

BEAVER ST ELEVATION

SECOND REFORMED CHVRCH
(MIDDLE DVTCH)
ALBANY N.Y.
Ph Hooker Architect.
1810

Restored By
J.L. Dykeman '17

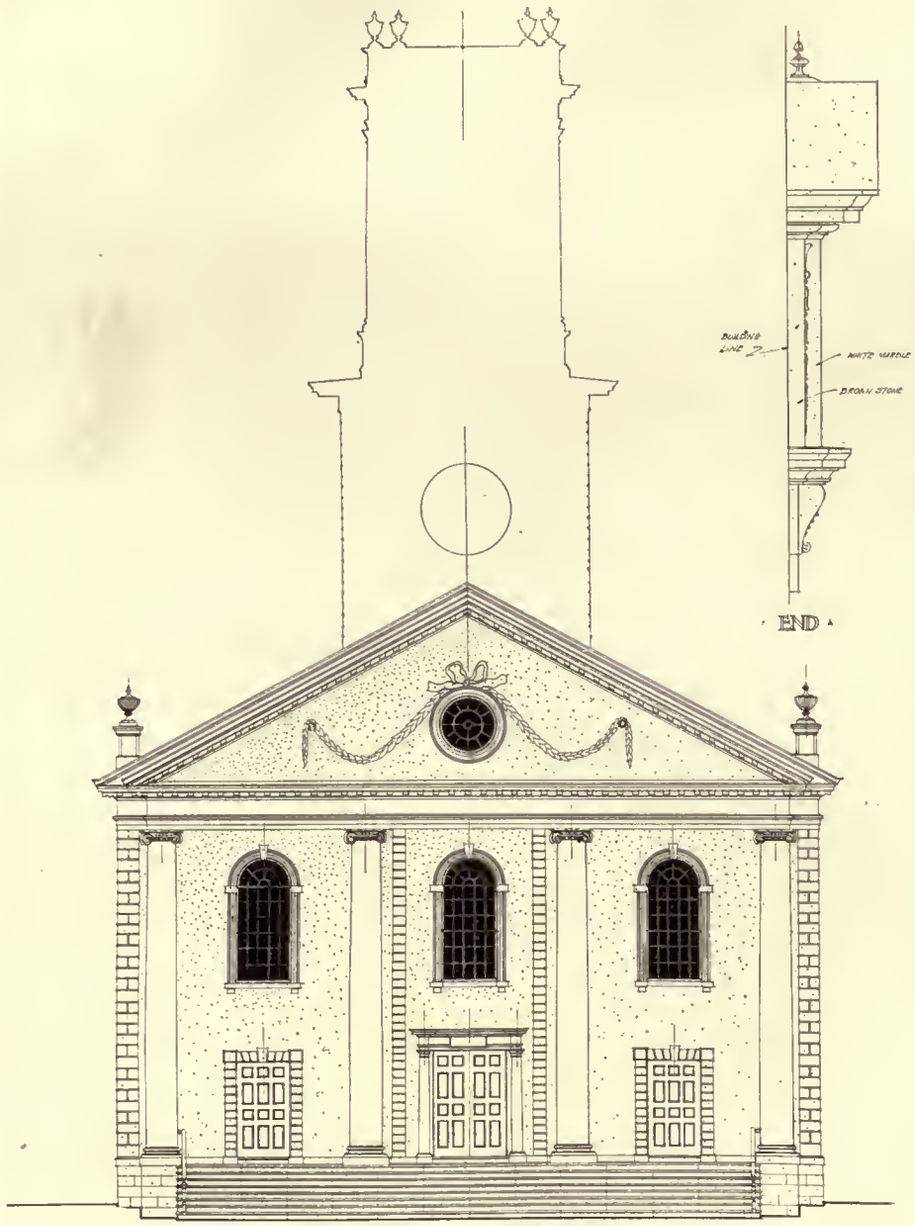


PLAN

SHOWING MAIN FLOOR AND GALLERY

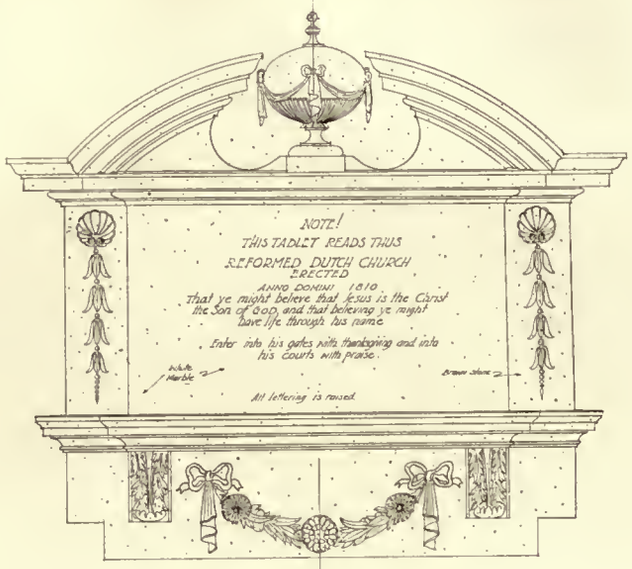
WEST ELEVATION

Restored Plan
J. L. Dykeman '18.



HVDSON ST. ELEVATION

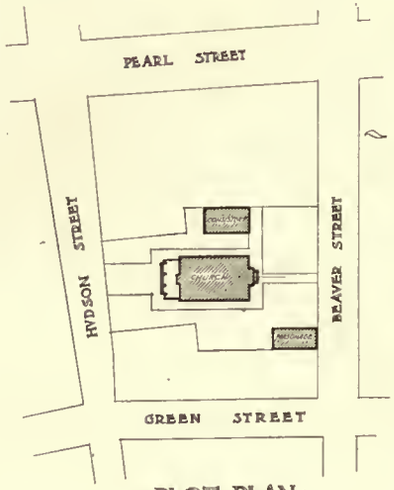
END


NOTE!
THIS TABLET READS THUS
REFORMED DUTCH CHURCH
ERECTED
ANNO DOMINI 1810
That ye might believe that Jesus is the Christ
the Son of God, and that believing ye might
have life through his name.
Enter into his gates with thanksgiving and into
his courts with praise.
White Marble
Brown Stone
All lettering is raised.

DETAIL OF TABLET · BEAVER ST. ELEVATION ·

SCALE FOR TABLET

PROFILE



PLOT PLAN

SECOND REFORMED CHVRCH

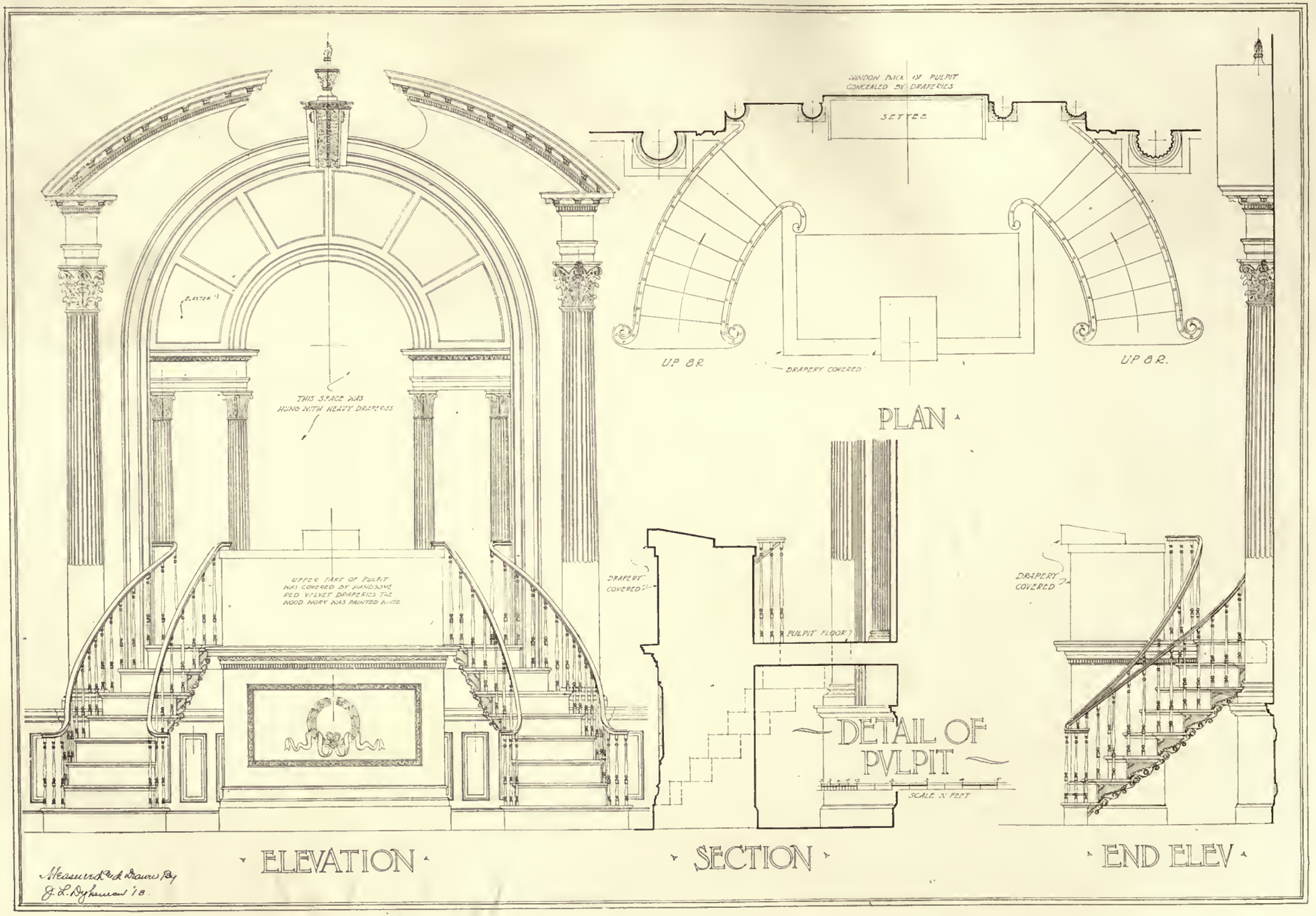
(MIDDLE DVTCH)

ALBANY · N·Y

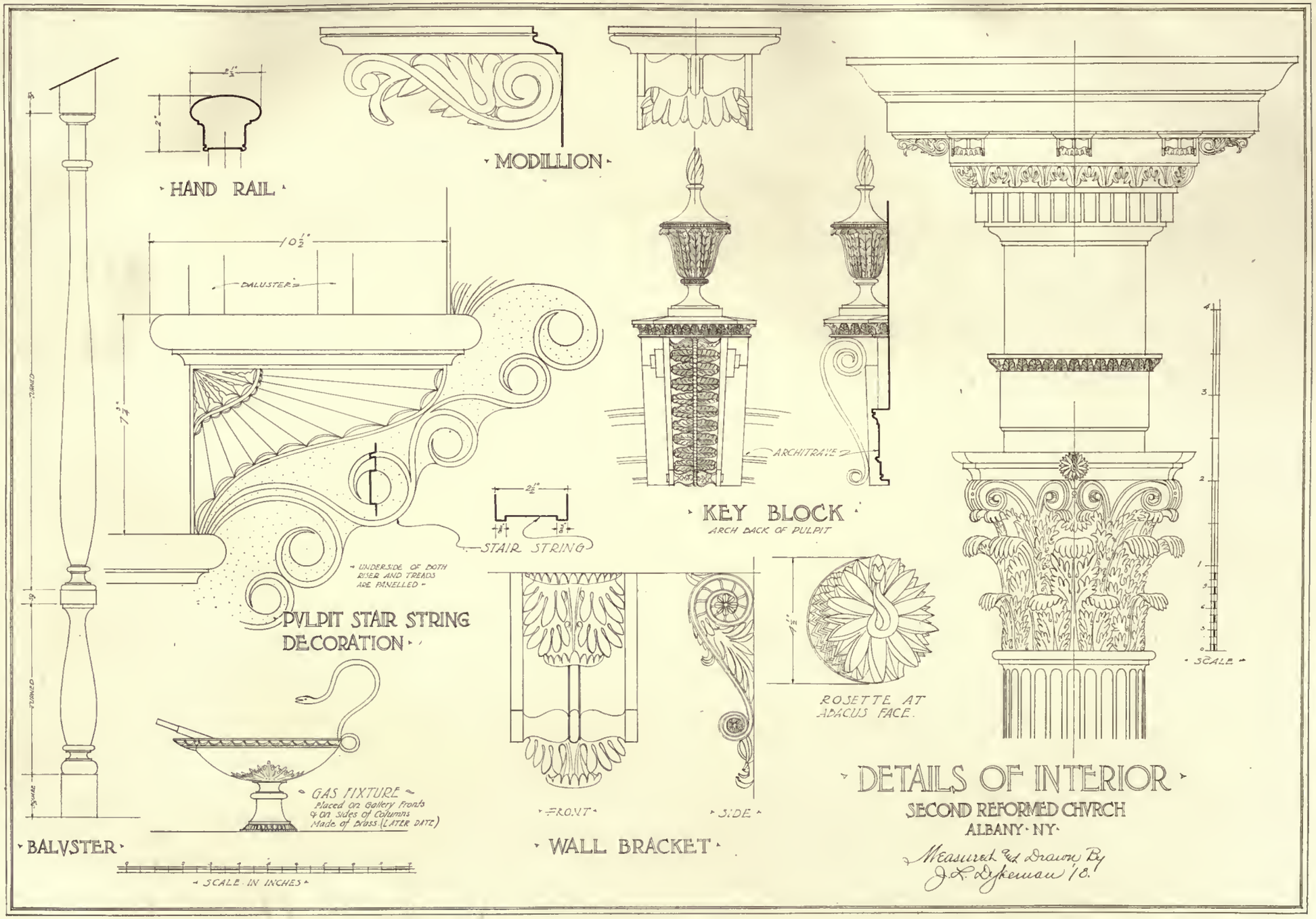
Ph. Hooker — Architect

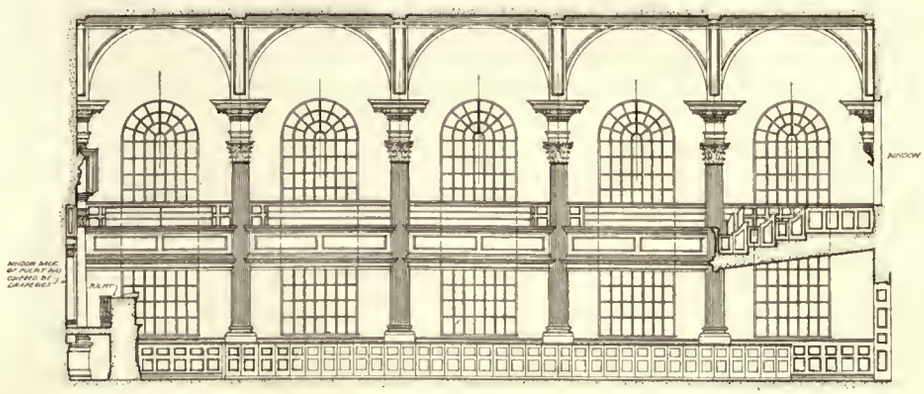
1810

Restored By
J. L. Dykeman '10



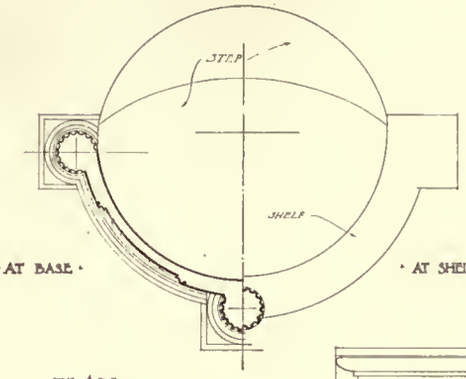
Measured & Drawn By
J. L. Dykeman '18


HAND RAIL
MODILLION
DALUSTER
UNDERSIDE OF BOTH RISER AND TREADS ARE PANELLED
PULPIT STAIR STRING DECORATION
STAIR STRING
KEY BLOCK
ARCH BACK OF PULPIT
ARCHITRAVE
ROSETTE AT ABACUS FACE.
SCALE
GAS FIXTURE
Placed On Gallery Fronts & On Sides of Columns
Made of Brass (LATER DATE)
BALUSTER
SCALE IN INCHES
FRONT
SIDE
WALL BRACKET
DETAILS OF INTERIOR
SECOND REFORMED CHURCH
ALBANY · NY ·
Measured and Drawn By
J. L. Dykeman '18.



LONG SECTION

SCALE IN FEET



AT BASE AT SHELF

INTERIOR DETAILS

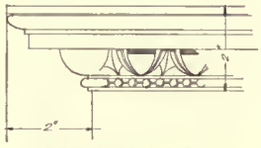
SECOND REFORMED CHURCH

ALBANY N.Y.

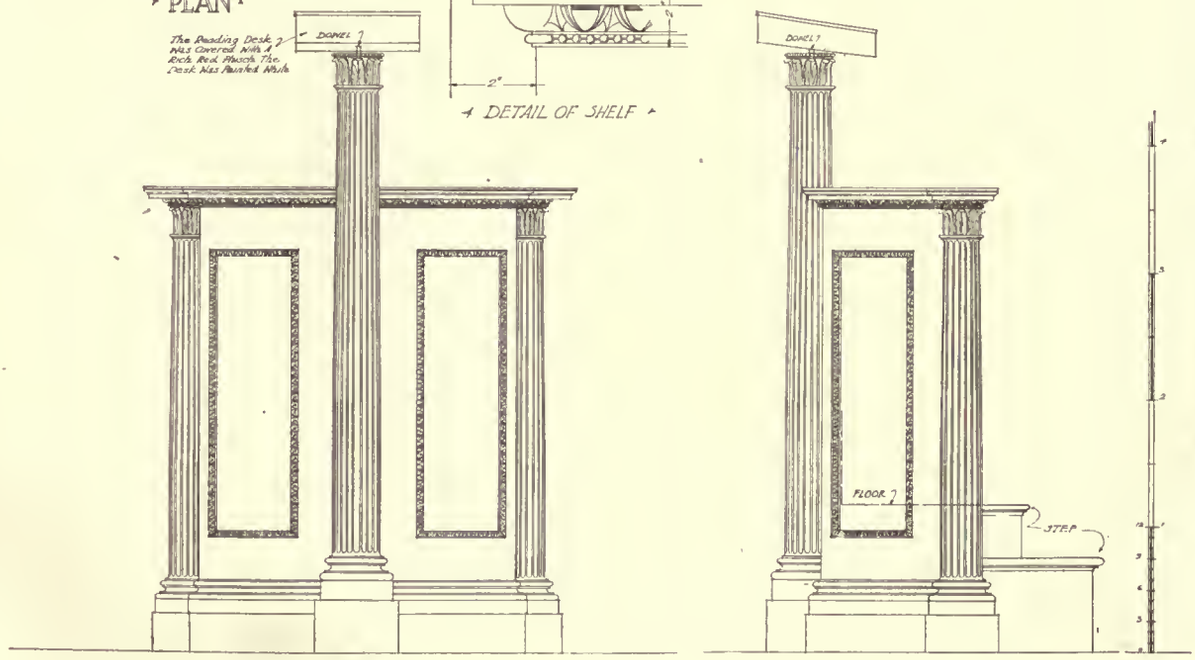
Ph. HOOKER
ARCHITECT
1810.

PLAN

The Reading Desk was Covered With A Rich Red Plush. The Desk Was Painted White



4 DETAIL OF SHELF



FRONT SIDE

VOORZINGER'S DESK

(THIS DESK STOOD IN FRONT OF PULPIT)

Measured & Drawn
By J.L. Dykeman '18

HOUSE AND GARDEN, RESIDENCE, A. CLAYTON WOODMAN, MERION, PA. Frank Seeburger, Charles F. Rabenold, Architects.

RESIDENCE, HENRY P. DAVISON, 690 PARK AVENUE, NEW YORK.

Walker & Gillette, Architects.

RECEPTION-ROOM, RESIDENCE, HENRY P. DAVISON, 690 PARK AVENUE, NEW YORK. Walker & Gillette, Architects.

LIBRARY, RESIDENCE, HENRY P. DAVISON, 690 PARK AVENUE, NEW YORK. Walker & Gillette, Architetcs.

MAIN ENTRANCE.

STAIRWAY, SECOND STORY.

Walker & Gillette, Architects.

RESIDENCE, HENRY P. DAVISON, 690 PARK AVENUE, NEW YORK.

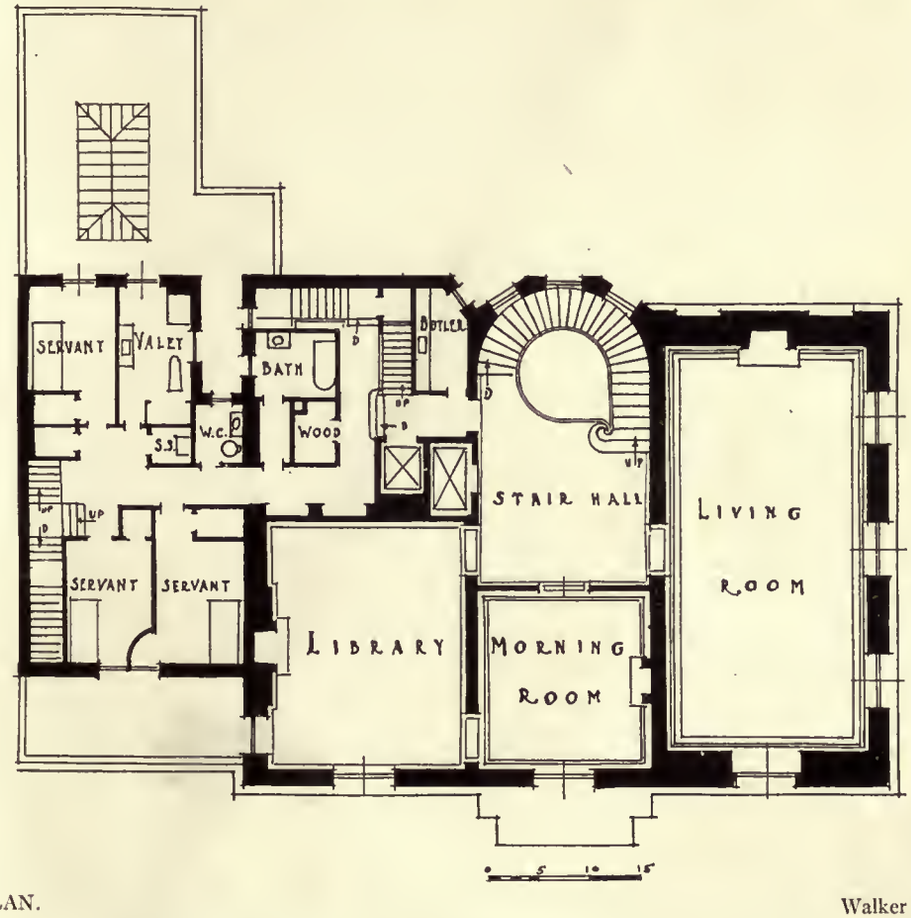
DINING–ROOM.

LIVING–ROOM.

Walker & Gillette, Architects.

RESIDENCE, HENRY P. DAVISON, 690 PARK AVENUE, NEW YORK.

UPPER HALL.

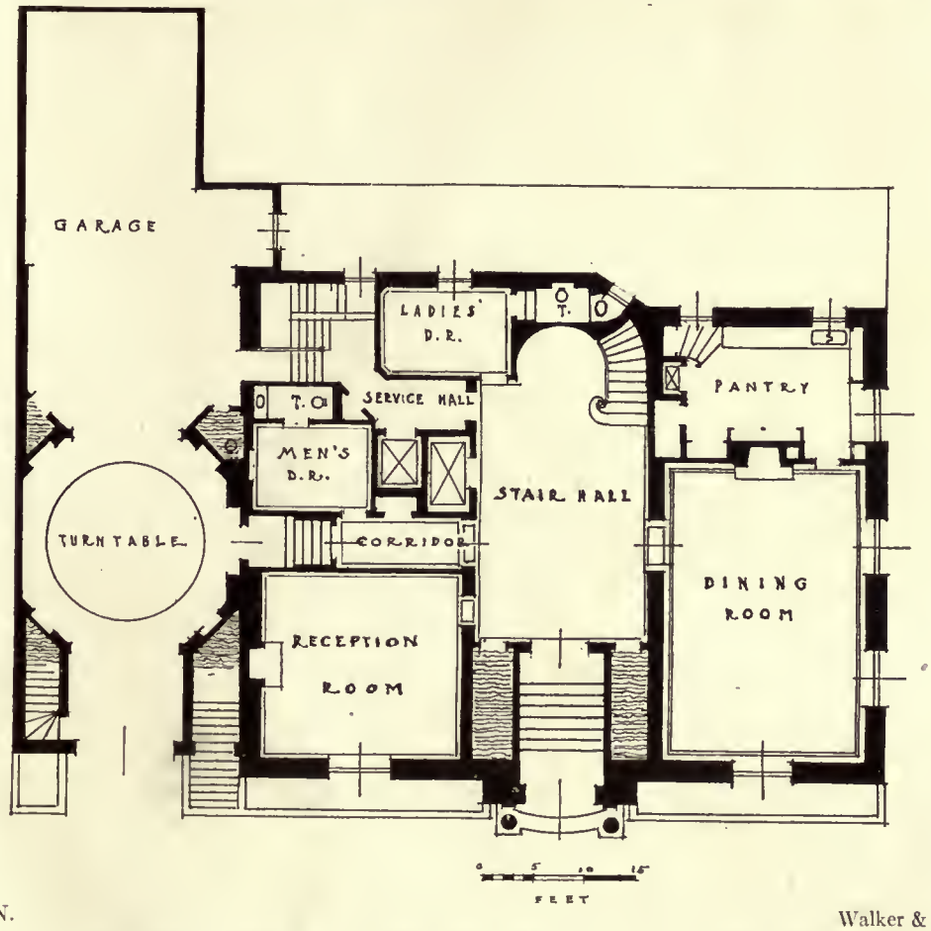


SECOND-FLOOR PLAN.

Walker & Gillette, Architects.

RESIDENCE, HENRY P. DAVISON, 690 PARK AVENUE, NEW YORK.

MAIN HALL AND STAIRWAY.

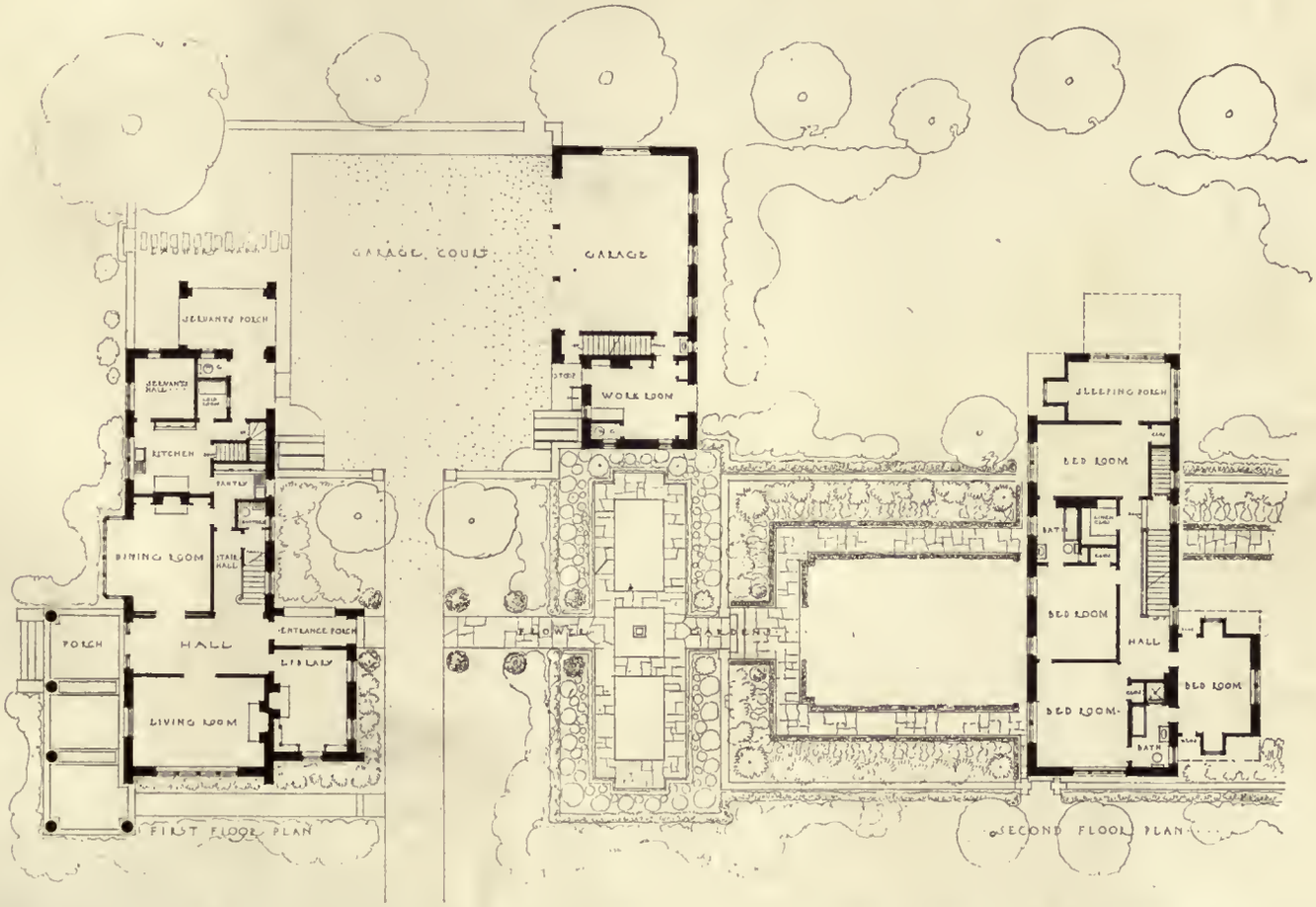


FIRST-FLOOR PLAN.

Walker & Gillette, Architects.

RESIDENCE, HENRY P. DAVISON, 690 PARK AVENUE, NEW YORK.

HOUSE AND GARAGE.



HOUSE AND PLANS, A. CLAYTON WOODMAN, MERION, PA. Frank Seeburger, Charles F. Rabenold, Architects.

Some Further Practical Suggestions on the Writing of Specifications

By David B. Emerson

UNDER the present building conditions, and with so many of the former luxuries now regarded as necessities, the architect of to-day must needs know far more than his forebears of a generation ago, and with the steady progress of invention and improvement in the specialties which enter into modern building, must be continually adding to that knowledge. All of this adding to the conveniences in buildings of every sort naturally adds much to the work of writing the specifications, and makes it necessary for the specification writer to know much more than the mere construction of the building. He should be able to write intelligent, comprehensive, and workable specifications for steam-heating, electric-light wiring, and elevators, in as much as they may be required in small buildings of a simple character. Of course if any large building with a complete power plant, including high-pressure boilers, engines, generators, pumps, elevators, etc., is to be built, it would not be expected that the architect, or an architectural specification writer, would be able to write the specification for such a complicated piece of work, but a consulting engineer should be called in at the first inception of the plans and work in conjunction with the architect, laying out all that part of the work and writing all the specifications covering it. But in the case of residences, small commercial buildings, small apartment-houses, and other buildings of moderate size the specifications should be written in the architect's office.

To begin with, if an architect retains the services of a consulting engineer on every little job which goes through his office, and many of our architects must take more small than large jobs, he will materially reduce the profits of his practice, and at best the profits in the practice of architecture are not gigantic. To be sure, there are quite a number of engineers representing manufacturers who will lay out systems and write specifications gratis, provided they can get their specialties into the building, also a number of wise contractors will do the same thing. Now it stands to reason that in these highly commercial days no one is doing anything for nothing, so with that kind of free service the owner is paying the bill, only he doesn't see it, and the architect is pretty generally getting bad results, which may react against him when the errors and omissions crop up later; for, unlike the doctors, the architect's mistakes are very much above ground. With a little careful study the specification writer can master the subjects so that he can write clear and concise specifications for heating, electric-light wiring, and elevators, from which competitive bids can be taken without a large factor of guesswork, which is altogether too often the case, and from which the work may afterward be installed exactly as it was bid upon. As I said in an earlier article (February), the specification writer should of necessity have some experience superintending construction, so if he has superintended the installing of a few heating systems and the wiring of a few buildings, he will be able to write the specifications as required. In writing specifications for steam-heating, the following general instructions should, if followed, produce satisfactory results if the heating plans have been carefully drawn and the radiation has been properly calculated. Always begin the specification by stating exactly the system you intend using, whether direct or indirect, one pipe, two-pipe, gravity, return, or a vacuum system. Specify the style and type of boiler to be used, very carefully, whether sectional cast-iron or tubular steel; give the grate area and the required number of square feet of radiation. In all sections of the country where soft coal is the usual fuel, always specify a down-draft boiler, as it gives better combustion and reduces the amount of smoke to a minimum. Most all cities where soft coal is burned have ordinances making it mandatory to use down-draft boilers. Steel boilers should be specified to be set with selected hard-burned brick, laid up in cement mortar, walls of furnace, budge walls and back connections to be lined with fire-brick, laid in fire-clay, with closely rubbed joints. Smoke pipe should be specified to be of not less than No. 20 gauge sheet iron. Call for all steam and water gauges, and pop safety-valves on all boilers, and a full set of fire tools.

All piping should be specified to be black wrought-iron pipe, standard weight, and in all high-class work pipe should be specified to be genuine puddled wrought-iron, not steel pipe. Always call for all pipe to be reamed out after cutting, to give the full size of pipe, and to be well rattled to remove all dirt and scale. All fittings should be specified to be standard cast-iron fittings, to have perfect threads, and pipe to be made perfectly tight without the use of red-lead, cement, or other compound. Specify that all steam mains and returns shall be properly graded, grade to be not less than one-eighth inch in ten feet, nor more than three-eighths inch in ten feet, and that all pipe shall be put up in the most secure manner, with extra heavy iron hangers, properly arranged for expansion and contraction. In apartment-houses and other buildings where a large amount of hot water has to be furnished it should always be specified that proper-sized connections should be made from the main steam line to the hot-water storage tank, to connect with a brass or copper coil in the tank provided by the plumbing contractor, but connected by the steam-heating contractor (this to be in addition to the tank heater), as a great saving of fuel can be made by heating the hot water by steam during the months when the heating system is in use, and surprising as it may seem, many apartments have been built without that very simple and inexpensive arrangement. The hot-water storage tank should be specified to be equipped with an approved pattern of temperature regulator, both for the saving of steam and as a precautionary measure in case of the water getting too hot and the pressure bursting the tank. All valves should be described in the specification. Valves on the lines should always be gate valves, as globe valves, on account of their construction, hold back the returning water. All valves two inches and under in size, should be of brass, and all valves over two inches in size should have iron bodies and brass mountings. In high-class work, steam metal should be specified. Valves in cellars, and all places where they are liable to rough usage, should be specified to have iron wheels; all others should have polished hardwood handles.

Care should be taken to be very explicit in the specifying of air-valves for radiators, as there are a number of makes and patterns on the market, and they vary considerably in price and efficiency, siphon air-valves being listed

MAIN FRONT.

GARDEN HOUSE.

Frank Seeburger, Charles F. Rabenold, Architects.

RESIDENCE, A. CLAYTON WOODMAN, MERION, PA.

at around two dollars apiece; good quality automatic air-valves listed at around one dollar apiece, and the positive and automatic air-valves are listed at around three dollars a dozen. So if one is looking for the best, it should be so specified. Vent-valves should be specified on all returns at the boiler, to relieve the basement piping of air.

Where a vacuum system is to be used, an approved type of vacuum-valve should be specified, to be used on the return of each radiator, and a vacuum-pump installed at the boiler. In all locations where there is a wide variation of temperature during the winter months, it is advisable to specify modulating-valves on all radiators, so that the heat in the rooms may be regulated to accommodate the outside temperature.

Always specify that all pipes shall have floor and ceiling plates of an approved pattern, and where pipes run through floors and ceilings, and lath and plaster partitions, that they shall be provided with sheet-metal tubes one inch larger than the pipe. All radiators should be specified in no case to project above the sills of windows, and where any special type of radiator is required, it should be specifically noted. Specify all radiators and exposed piping to be painted one coat of flat yellow ochre and finished in bronze or enamel as directed; all exposed ironwork in cellar or basement to be painted two coats of best air-drying Japan varnish. If the heating is to be done by an indirect system, the specifications should describe the radiation, which should be the pin type or other approved indirect radiation. The radiator boxes should be of galvanized iron, No. 20 gauge, where one dimension is thirty inches or over; No. 22 gauge where one dimension is sixteen inches or over. Boxes should be specified to have dampers and doors, and should be lined with asbestos board to prevent the loss of heat. The cold-air ducts should be of galvanized iron, of from No. 20 to No. 26 gauge, according to the size of the ducts. In every case cold-air ducts should be specified to be so constructed as to offer the least resistance to the flow of air, and should be properly braced. The main duct should have at least 75 per cent of the cross sectional area of the combined risers or ducts leading to the various registers. The main duct should be specified to be fitted with a positive tight-closing damper at the entrance to the building. All ducts should be specified to be provided with register faces in the outside walls, to be of cast iron, or if cost does not have to be considered to be of cast bronze. The vertical ducts may be of IX bright tin in low-cost work, and No. 26 gauge galvanized iron in higher-cost work. In all cases they should be specified to be made up of an inner and an outer pipe, with one-half inch air space between. The registers should be specified to be wall registers, with valves, and to be finished as may be desired for the rooms in which they are to be located. Always specify that the boiler and all piping in the cellar or basement, and any exposed parts of the building, shall be covered with an approved sectional covering. Covering on pipes to be one and one-quarter inches thick, to be properly cemented, strapped and fastened, and covered with heavy cotton duck and painted two good coats of lead and oil.

Always specify that the contractor shall guarantee his work and make a thorough test of the entire system before turning it over to the owner, and, if necessary, the owner may reserve the right to retain a certain amount from the contract price until the system has had a thorough test during the winter following the completion of the contract, and that the contractor shall make any necessary changes in the system to insure the proper working of the system.

In the writing of the specifications for the electric-light wiring of any building, first find out what kind of current is supplied by the local lighting company, direct or alternating, the voltage, phase, and cycles, and specify that the building shall be wired for that current, voltage, phase, and cycle. For any system having short runs and using a small amount of current, a two-wire system may be specified; but for long runs and a large amount of current, specify a three-wire system. Specify that not more than 660 watts shall be placed on any one circuit. In a great many cases it is advisable to specify separate wiring and a separate metre for cooking, heating, or power purposes, as many lighting companies make special low rates for this service. Also, note that the average electric cooking range requires more than 660 watts, so the one-light circuit specified above will not do for this service. Always specify that all wiring shall be done in strict accordance with the rules of the National Board of Fire Underwriters, the city ordinances, and the regulations of the local lighting company. To determine the method of installation, several factors must be considered if the building is to be of fireproof construction; the wiring must be run in rigid-iron conduit and must be so specified. If the building is of frame construction, and strict economy must be practised in its erection, and there is no local ordinance forbidding it, the wiring may be installed as a concealed-knob-and-tube system, but before specifying it the owner should be informed that there is danger of fire from overload, short circuit, or grounding with this system of wiring, and if he is willing to take the risk, it may be specified. If the local ordinances forbid the installing of the concealed-knob-and-tube system, and a more economical system than the rigid-iron conduit is desired, either flexible steel-armored conductors, generally known as B. X. work, or flexible steel conduit may be specified, the former being the cheaper system while the latter is a little better method, as wires may be replaced at any time without damage to woodwork or plaster. By all means the best method of installation, but the most expensive, is the rigid-iron conduit. In specifying the rigid-iron conduit, if the highest quality is wanted, call for hot dipped galvanized conduit; if a more economical job is desired, call for enamelled conduit, and in a frame building enamelled conduit will last as long as the building. Whatever system may be used, specify carefully the manner in which the work must be done: the protection of the wires, that the porcelain insulators shall separate the wire at least one inch from the surface wired over, the quality of the porcelain tubes, and that wherever wires pass through floors, studding, etc., they shall be protected with porcelain tubes, that wires should be supported every four feet and should have flexible tubes from the nearest support to the inside of the outlet box, and where wire runs through masonry walls, it should be run in iron conduit, should all be specified when calling for concealed-knob-and-tube work. In B. X. work and flexible-steel conduit work, specify that all runs are to be secured in place with pipe straps. In B. X. work state that no bends shall be made with an inside radius of less than four inches, and that all armor shall be stripped with an improved armor stripper. Specify that no conduit shall be less than five-eighths inch inside diameter, and that no conduit shall contain more than four two-wire circuits, or three three-wire circuits, and must never contain circuits of different systems. In flexible-steel conduit work, specify that no bends shall be made with an inside radius of less than six inches. In rigid-iron conduit work, specify that all bends shall be made with an approved hickey similar to the "Lakin," or that a conduit bending-machine be used, and that no bends shall be made with an inside radius

of less than three and a half inches. Specify that all conduit shall be cut with a hack-saw, the ends to be square and reamed out after cutting.

All joints in conduit to be leaded and made absolutely water-tight. Specify that all conduit, either flexible or rigid, shall be fastened to all outlet boxes with lock-nuts and bushings. Specify that all conduit shall be properly grounded to the water service on the street side of the metre. Call for all outlet boxes to be standard pressed steel knock-out type; if a low-cost box is wanted, specify enamelled, but if the highest quality is desired, call for hot dipped galvanized steel. Galvanized steel will stand better in concrete than enamelled steel. In specifying the wire, if the best quality is desired, call for rubber insulated wire with protecting braids, having a rubber compound containing not less than 30 per cent, by weight, of Para rubber, otherwise call for wire to be N. E. C. standard. Specify that no wire shall be smaller than No. 14 B. & S. gauge, that for all circuits of one hundred feet or longer No. 12 B. & S. gauge shall be used, and that all conductors of No. 8 B. & S. gauge, or larger, shall be stranded.

Specify all local switches, electrolier switches, three and four way controls, closet-door switches, pilot lights, plug receptacles, floor receptacles, special outlets for cooking apparatus, etc. When specifying local switches, state exactly the type of switch which is required; on low-cost work call for single-pole snap switches in porcelain box; on high-cost work specify double-pole, push-button switches, with composition box, which are probably the most satisfactory type of switch on the market. Wherever there are three or more sockets in the ceiling of a room controlled by wall switches, call for three wires to be run between the switch-box and the outlet boxes, and to be provided with an approved type of electrolier switch. Specify three and four way switches for halls and stairways, to be located on the different floors. In all high-class residences, automatic door switches should be specified for all clothes-closets. The use of door switches in low-cost houses is not advisable, as leaving closet doors partly ajar leaves the light burning and runs up the bills for current.

Lights in the cellar and on porches should be specified to have switches with pilot-lamp in parallel, on the load side of the switch. Call for lock switches in the corridors of apartment-houses, hotels, or other places where it is desired to prevent unauthorized persons from throwing lights on or off. In hotels, even though they may only have one hundred rooms, it is an economical measure to install door switches which, when the door is locked from the outside, throw off the lights, and when unlocked throw them on again; the saving of current will pay for the switches in a very few months. In the matter of specifying plug receptacles, there are quite a variety of types on the market, probably the simplest is the screw-plug type, which is quite inexpensive and will receive any Edison attachment plug. This receptacle is most generally specified in all low-cost work. Probably the better type to use is some one of the safety-type receptacles, either a safety screw plug, the disappearing door type, or a type in which a two-pole plug is inserted, the two doors only opening when both poles are inserted and closing automatically when the plug is withdrawn. These plugs are pretty nearly fool-proof.

If a floor receptacle is required in the dining-room, call for a water-tight floor box, with 25-ampere plug receptacle, wired with No. 10 B. & S. gauge wire, and furnished with multiple connection-block, consisting of three individually fused plug receptacles. The connection between the plug receptacle and this block shall be made by means of ten feet of No. 10 B. & S. gauge approved silk-covered portable cord, with an approved 20-ampere cord connector, two feet from the multiple block. If the building has been wired for electric cooking apparatus, call for pilot-light board, fuse cut-out, double-pole switch, pilot-light and receptacle, at range outlet, heater outlets to have switch, pilot-light and receptacle, receptacle to be same type as specified for plug receptacles. Always call for all plates on all switches, receptacles, etc., to match the hardware of the room in which they are located in design and finish. In high-class residential work, call for a special burglar light, as there is nothing a burglar dreads more than light. Specify that the lights shall be wired and switched with two-pole and three-way switches, so that any light may be turned on by its respective three-way switch, and all lights may be turned on by two-pole control switches in bedrooms.

The service-entrance switch should be carefully specified in low-cost work, especially in very small houses, a 30-ampere switch with porcelain base, with connections for plug fuses, mounted on an asbestos-covered wood block will be sufficient; but in higher-class work it should be mounted on a slate base, with connections for cartridge fuses, and set in a moisture-proof metal box with a hinged door. The better way is to specify one of the several types of enclosed safety switches now on the market, as it is impossible for accidents to occur if they are used. This applies particularly to apartment buildings, where each apartment has its own service switch, and some persons, not knowing the danger, try to turn on the current and accidentally touch the live parts. In many cities the light companies have their own rules governing the installation of service switches, so before specifying the service switch, the specification writer should familiarize himself with the regulations of the local company and specify the service switch and metre connections according to these regulations.

Panel cabinet in knob-and-tube installations shall be specified to be of hardwood, lined with one-eighth-inch sheet asbestos, fitted with two or three wire branch cut-outs, of the required voltage. In B. X. work, flexible-steel conduit work, or rigid-iron conduit work, the panel cabinet must be specified to be not less than No. 12 gauge steel, reinforced with angle-iron frames, securely riveted in place; in high-class work, specify that cabinet shall be not less than No. 10 gauge steel, cabinet to be fitted with branch cut-outs as previously described; a safer type of cut-out is the dead front panel. Cabinet should be specified to be enough larger than panel to give at least a four-inch wire space around panel; panel should be surrounded with an ebony asbestos or slate partition, one-half-inch thick to form wire space. Cabinet should be provided with a door and lock; if cabinet is of wood it should be specified to have a panelled wood door lined with three-eighth-inch asbestos, otherwise a steel door should be called for. A directory of circuits in a metal frame, with a glass front, should be specified to be mounted on the inside of the door. Specify the house feeder to run from the service switch to the panel board, feeder to be figured in accordance with the national code for carrying capacity; allowing for all circuits being loaded, feeder should be of sufficient size to confine the drop in voltage, with all lights in circuit, to 1 per cent of line voltage. Call for all service connections, whether overhead or underground, whether they shall be made by the contractor or by the lighting company, in accordance with local regulations.

All wiring, bells, buzzers, push buttons, etc., for call-bell systems, should be specified. In frame construction call for No. 18 B. & S. gauge, cotton-covered, paraffined wire, cleated to joists and studs with insulated staples; in fire-

proof construction call for rubber insulted wire run in rigid-iron conduit, similar to electric-light wiring; conduit may be as small as three-eighth-inch diameter. Call for all bells and push buttons, and describe annunciator giving the number of stations. In apartment-houses call for push button in each apartment to operate door opener at main entrance. Where required, specify a burglar-alarm system, to be wired as called for under call-bells. System to consist of the necessary wires, window springs, door springs, night-latch cut-out for front-door bell, cabinet, interconnection strip, and everything required for a complete open circuit system. Specify interconnection strip to have cut-out switches for each circuit as well as a double-pole battery switch.

Whenever alternating current is used, specify the installation of a bell-ringing transformer for all bell and burglar-alarm systems, as the transformer practically lasts forever, and the cost of current is so infinitesimally small that it cannot be measured by the metre, the primary wiring of the transformer to be specified to be the same as that for light outlets. If direct current is used, specify three cells of carbon cylinder battery in a substantial cabinet, both for call-bell system and for burglar-alarm system.

In fireproof construction specify that a three-eighths inch or one-half inch rigid-iron conduit shall be run from the point of entrance of the public telephone to the telephone locations as shown on the plans, conduit to be installed as specified for electric-lighting conduit.

Where required in private residences, or in apartment-houses, or hotels, specify intercommunicating telephone system. In frame buildings cables may be supported by means of pipe-straps, but in fireproof buildings they should be installed in rigid-iron conduits, as specified for electric-light wiring. All wires should be specified to be cables containing one pair of No. 22 B. & S. gauge conductors for each station, and a pair of No. 16 gauge conductors for talking and ringing battery, respectively; each pair of wires shall be twisted around each other to eliminate cross-talk and inductive noises. Wires should be specified to be silk-insulated, coated with beeswax, or varnished, and covered with a lead sheet at least one-sixty-fourth inch in thickness. Call for all telephone sets as may be required, to be either common talking, sectional talking, or selective or non-interfering talking, as may be desired. In apartment-houses specify vestibule set complete, either with or without letter-boxes, janitor's set with annunciator in basement, and the room sets in each apartment.

I have endeavored in this brief article to give a fairly clear outline of the specifications for steam-heating and electric-wiring. There is much that probably has not been mentioned, and as each building makes a new problem, something new is always presenting itself to the specification writer, and new appliances and improvements on the old ones are coming out all the time. So the specification writer must be on the alert and keep pretty well up near the front of the procession all of the time if he wishes the best results from his work.

Reflections of an Architectural Draughtsman

By Talbot F. Hamlin

II

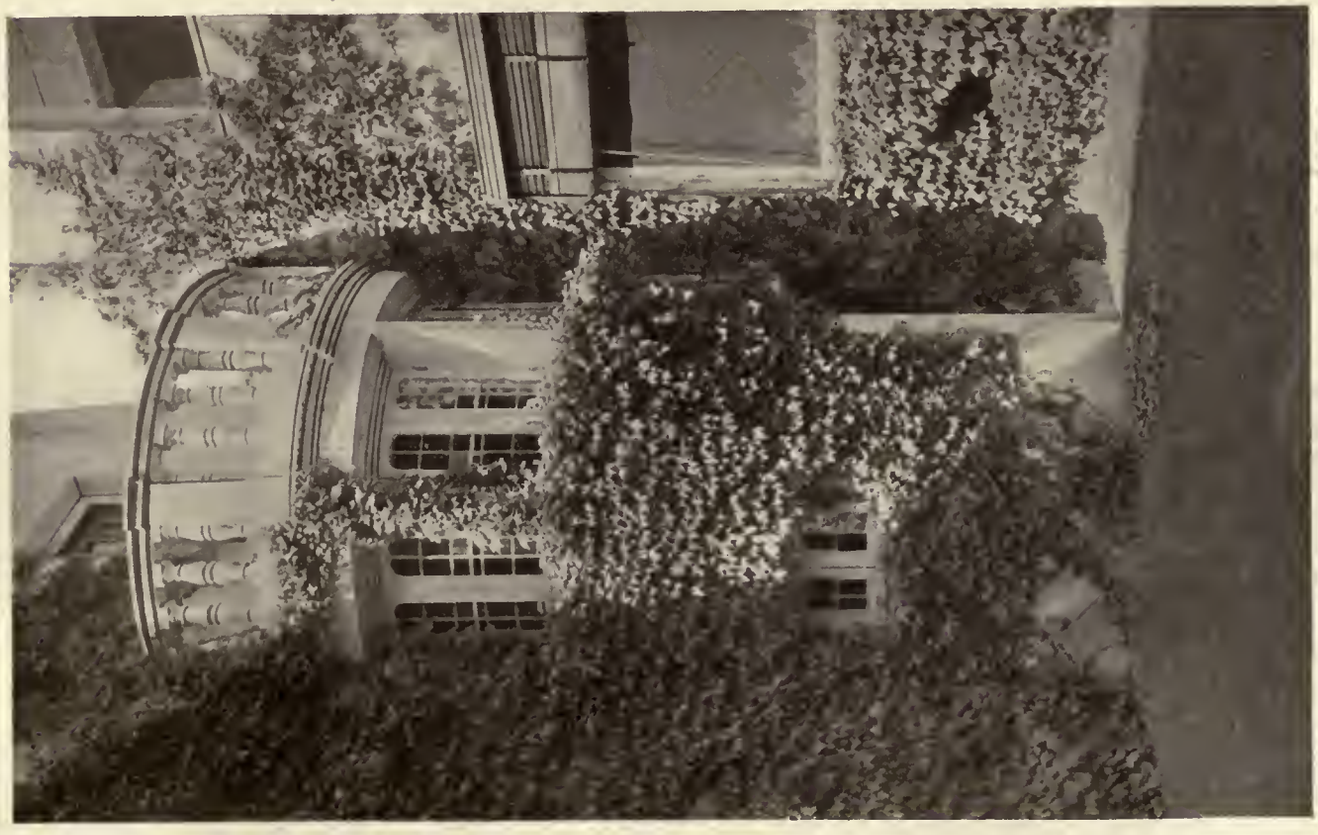
EFFICIENCY AND HUMANITY

O. HENRY once wrote a story about an architectural draughtsman. That is proof enough that at least one outsider realized the draughtsman was human. O. Henry tells how once a year a certain draughtsman decked himself gayly in his dress suit and sallied forth to spend most of his year's savings in one tantalizing evening of colored luxury, and how once on such a night he found romance amid the garish brilliance of Broadway. For the present purpose it matters not how the tale ended, the important thing is its uncanny insight into the conditions which make the draughtsman's position peculiar; the forces which combined in this case to make him seek this particular expression of his human longings—a year of penury for one evening of happy and carefree extravagance.

Such an expression, such an attitude as is revealed by this story—and the truth of the story few who know will question—is the inevitable result of the fact that the draughtsman, earning at best a humble salary, is in daily contact with the amenities and beauties that wealth alone can buy. He, with his fifteen or eighteen hundred or even two thousand a year, works indirectly for clients who do not hesitate to spend ten times his annual income on a mere garage; it is his particular job in one way or another to direct that expenditure. Nor is the draughtsman dealing with mere great sums of money, mere abstract wealth, but with something much more insidious, much more powerful. He is devoting his imagination and energy to the task of making expenditure count, making expenditure beautiful and worth while. He is continually employed in marrying the ideal of beauty to the power of wealth. His discrimination becomes daily more acute. In return for his direct services to his employer he receives his salary; in return for his indirect services to the client he receives a continual unconscious education in the beautiful things that wealth can do and leisure enjoy. It is an education that reacts strongly on any mind at all sensitive to beauty, at all susceptible to the amenities of life; and it requires either a voluntary blindness or a wealth of strong idealism to prevent that reaction from resulting in vain envy, or materialistic opportunism, or in a vague and disillusioned bitterness.

The draughtsman's problem, then, resolves itself down to the problem of the man with poverty and good taste everywhere. The poor man with taste can sell his soul for wealth to satisfy his taste, and discover too late that the bargain was terribly bad; he can become arrogant and bitterly proud; or he can seek satisfaction in a continual progress and struggle for ever more and more complete self-expression in his creative work. Surely the last is the best,

Harry Allan Jacobs, Architect.



RESIDENCE, HERBERT H. LEHMAN, PURCHASE, N. Y.

the only true solution of the problem; surely if architectural offices have the good of all in their mind, they should so organize as to assist the draughtsman toward this ideal of creative self-expression, creative taste rather than the taste that merely enjoys.

The architectural office has many purposes besides this. Among others, it must make money. Alas! that ideals and purposes must clash. Alas! that mere humdrum preoccupations with the science of making ends meet should cloud the architect's vision. Alas! that the humanity of the employees should be forgotten in the struggle. For at last the offices have discovered the way to prosper; they have seen the vision, they have found "efficiency."

"Efficiency" is a much misused word. We Americans hate dictionaries. We love to let our minds play with undefined terms; we love to make ourselves gods of words whose meaning we neglect to state; we ring them around with taboo, we let worship of them take the place of reason. "Efficiency," "System," "Bolshevism," "Democracy," are but a few samples of the vague nouns that fly around in the rosy confusion of our optimistic minds, like bats in a fog at twilight.

"Efficiency," for example—"efficiency" gained by "system"—is a modern god, to which we kowtow in all our works. Efficiency in its true sense—the power of accomplishment—is a worthy end to seek. But "efficiency" in its cant sense of to-day is far from that. "Efficiency" means one thing in the dictionary; in modern life it means another—quantity production. It is attained by means of standardization. Its system is founded on the fact that a machine produces swiftly because it does not have to think. Therefore to make an organization efficient, one must make every person in it as much a perfect cog in an implacable and irresistible machine as possible. The interest and co-operation of the cog-wheel men are sought by means of bonuses; but such interest and co-operation are not real thought; the system lives by such a process of standardization and specialization as shall make thought unnecessary, or necessary to as few individuals as possible.

The efficiency system has begun to creep into the architectural offices because of a powerful industrial trend that, in action for a long time, has lately found frank and open and rather arrogant expression in harsh criticism of the entire architectural profession, coming mostly from architects themselves. An examination of them should lead to more light on "efficiency" itself and its architectural effects.

The criticisms are mainly along two lines. One concerns the services of the architect, the other concerns his system of professional ethics. In brief, the criticism under the first head is the wide-spread complaint that architects do not furnish their clients with practical, serviceable advice in the inception of work nor satisfactory competent supervision in its construction. The critics seem to conceive that an architect should be business adviser, financial authority, if necessary, financial agent, an authority on every side—particularly the mercenary side—of every possible kind of life; mechanical, civil, electrical, and sanitary engineer; superintendent; contractor. The architect is suffered to include the ability to design beautifully if he wishes, as a quite secondary feature. It is a beautiful catalogue. Even its adversaries will allow its inclusiveness.

The criticism under the second heading claims that the architect's professional code allows him no freedom, prevents any businesslike organization, destroys his ability to sell his services advantageously and make money. It is claimed that architects should advertise. There should be absolute freedom in competition, with no fixed rates of charges. Abolish the American Institute! these critics clamor.

Both criticisms unite in the claim that architects are too aloof, too "artistic." They are said to dwell in the dim past, unaware of modern realities, for under modern conditions architecture, it is claimed, is less a matter of proportion and detail than of dollars and cents.

These criticisms have already resulted in two things: First, they have raised to new esteem firms of contractor-architects, who both design and construct. Secondly, in their insistence on a typical American catchword—"business" or "businesslike"—they have still further clouded the already dark question of what, after all, is the architect's true function.

The old conception of the architect was a man who designed and supervised the erection of beautiful buildings. That seems a simple and straightforward definition, and it certainly indicates a sufficiently complex job for any one. The architect cannot be a business adviser nor a real-estate expert any more than a broker can be a doctor. A sick man does not usually consult a doctor with regard to his chances of money-making in a place to which he has been sent for his health; if he does, it is as man to man, not professionally. Nor does the doctor in his professional capacity finance his patient's trip. The very doctors the country is trying to get rid of are those most like the critics' conception of the ideal architect—those who use financial and extra-professional means of adding to their clientele. If it is absurd for a patient to go to his doctor for tips on the market, it is equally absurd for the client to expect his architect to be an expert adviser on real-estate conditions, or a promoter of hotel stock. Give the architect his problem, and demand of him as economical and beautiful a result as is compatible with the conditions, but no more.

It is harder to draw the line between contracting and architecting. The architect-contractor has many plausible offers to make to the public. His client pays but one fee for both design and construction, and is assured of close co-operation between the designer and the builder. He is saved time and trouble. To the contractor-architect this arrangement also seems very attractive, for, if properly managed, it should allow him to pocket the profit on the entire construction cost instead of the mere pittance of an architect's fee. But there is one fallacy rooted deep in the entire conception. That is a fallacy dear to the universal gullibility of human nature: the endless hope of getting something for nothing.

For think. Designers cost money. Draughtsmen cost money. Building costs money. It does not matter who pays this money; the costs are inevitable. If, then, the architect-contractor aims to give both design and construction for a price at all attractive to the client, and if he hopes to make his contractor's profit, he must allow in his bid the least possible amount for design. The results are easily apparent, both in design and in the organization. The scheme is often insufficiently studied. Details are bookish, impersonal, uninspired. The style is likely to be the fashionable style rather than the style the conditions require. The organization of the office becomes mechanical—"efficient"—and turns out its hundreds of drawings on time.

The whole efficiency system has arisen in architectural offices as a result of these criticisms and these tendencies; it is an attempt to make the profession profitable and up to date. The quantity production of drawings is profitable; if the profits drop down like manna from heaven, why worry about values merely æsthetic and human? It is good "business"—let us rejoice and be glad that at last we are up to

SECOND FLOOR PLAN

FIRST FLOOR PLAN

Harry Allan Jacobs, Architect.

RESIDENCE, HERBERT H. LEHMAN, PURCHASE, N. Y.

DINING-ROOM.

date! And the practical results? Efficiency can produce perfect plumbing systems, good mechanical equipment, economical construction. It may even contrive to put itself in a position to give good financial advice, or secure financial backing for the aspiring client.

That is all. Design, originality, personality, enthusiasms—except the enthusiasm for lucre—these efficiency starves. Thank God, architecture is more than plumbing or heating. It is more than good construction. The engineers can furnish expert services on mechanical matters and construction better than any architect under any system. If that were all there were to architecture, we architects had best go out of business, we draughtsmen become engineers or illustrators.

It is because of their inevitable result in the "efficiency system" that these new conceptions of architecture as an industry or a business rather than a profession or an art are of such vital personal importance to the draughtsman. Suppose for the sake of argument that architects as designers of beautiful buildings are obsolescent, behind the times, useless encumberers of the earth—which Heaven forbid! Suppose every architect to be business man, builder, financier, engineer first, and designer in odd moments only. Suppose he is permitted—nay, encouraged—to advertise, to build, to boom materials, to enter pell-mell the sordid and angry competition of the contemporary economic world; to sear the dollar-sign over his mind. It would follow that the type of architect would change immediately. People would choose to become architects as they now choose to become stationers or butchers or brokers or undertakers, to make their pile, for the money to be gained by astuteness rather than for a service to be rendered to the world by means of living Beauty.

Under such a régime, the office would be a means primarily of making money; not perhaps at first, but in the end inevitably. Success could be measured only by profits, and any offices which attempted other kinds of success—æsthetic success, for instance—would soon be starved out. In the successful office the designer would be as subservient to the business manager as any factory-hand to his overseer. The efficiency system would reap its harvest of gold and machines.

Of course some of this gold would find its way into the draughtsman's pocket. But at what a cost! Overtime and mechanical, spiritless work; the continual sacrifice of leisure and personality—these form a price that the average draughtsman is loath to make, unless he is compelled by the force of economic circumstance. For the draughtsman loves his work not on account of the weekly pay-envelope (whose size is no reason for undue affection) nor on account of the mere lines he diurnally draws. It is not pencil-pushing that makes the draughtsman eager, but the opportunity he finds for some little self-expression.

The depth of this feeling is not sufficiently realized, nor its importance to the artistic success of a building as well as to the draughtsman's own happiness. As long as he feels a personal interest in the output of the office, and sees his brain and his skil and his taste gradually being builded into enduring beauty, so long he will continue happy because he is of some use in the world. The tragedy is that even to-day the chasm between the draughtsman and his real work—the building, not the drawing—is growing continually wider, to the detriment of the artistic value of our architecture and the happiness of the draughtsmen.

To be sure, the completely industrialized office is still an exception. The vitality and thoughtfulness of the best contemporary architecture bear convincing witness to careful study, personal taste, and loving work in every detail; a combination impossible without the truest co-operation and self-expression in the office. But if the present-day critics have their way, more and more industrialization will creep in, more and more the office will become a plan factory, more and more the efficiency ideal will govern, and the business manager dominate. And more and more the draughtsmen will lose their greatest compensation, their opportunity for creative study and work, for under the efficiency system their work will become a mere cold and predetermined task, their draughting and study mere pencil-pushing, themselves mere machines.

In the eighteenth century the greed of the French nobility almost succeeded in making mere production machines of the peasants; fire and blood of revolution wiped them out. In our own day the attempt to develop men into mere machines for producing has resulted in a chaos in Europe whose result no man can foretell. In our own vaunted country the efficiency of greed has produced an unrest that troubles every town and every industry. Must architecture follow the industrial lead? If so depend upon it, it too will reap the same harvest—the inevitable protest of men whose birthright to individuality is denied.

Time was when the relation between architect and draughtsman was a sort of pleasant partnership. In some offices that pleasant and healthy condition still exists, but the profession in general is developing along other lines. The draughtsman is becoming less and less a partner, more and more an employee and his profession is fast becoming a trade. He is slowly awaking to this condition. When his waking is complete, the whole status of the profession of architecture will suffer a revolution; for once the draughtsman realizes his essential slavery under any efficiency system, and sees the office growing prosperous because of its use of purely industrial methods, is it to be thought strange if he himself makes use of industrial weapons for his own defense? In other words, the draughtsmen will at last learn from the trades whose work they may help design and supervise; they will learn the power of organization and form their own union; bargain with their own skill. The effects of such an organization may be so far-reaching they demand serious consideration. But whatever they are, good or evil, in an industrialized architectural profession, a draughtsman's union is inevitable.

The Mayor of Indianapolis Says: "Be Willing to Pay the Cost of Peace"

"A STIMULATION in the building industry and in public improvements will be of immeasurable benefit to every city," says the Hon. Charles J. Jewett. "It will absorb the unemployed and keep the community in an active, healthy state. In the war, business concerns felt a responsibility to the nation and the city to hold their business organizations together, even at a sacrifice.

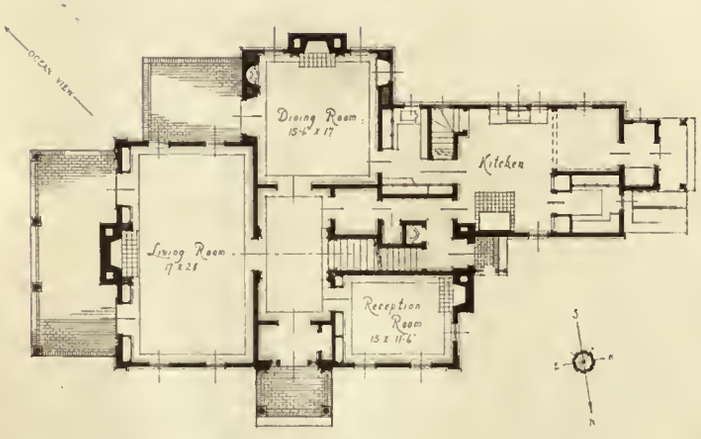
"This was a part of the cost of war. Now that we have peace, the same policy can be applied with the same excellent results, and may well be considered as a part of the cost of peace. If we hold back and wait for low prices before we again become active, we shall defeat the very object we seek to attain. We shall lose the money we sought to save."

LIVING-ROOM AND MAIN HALL.

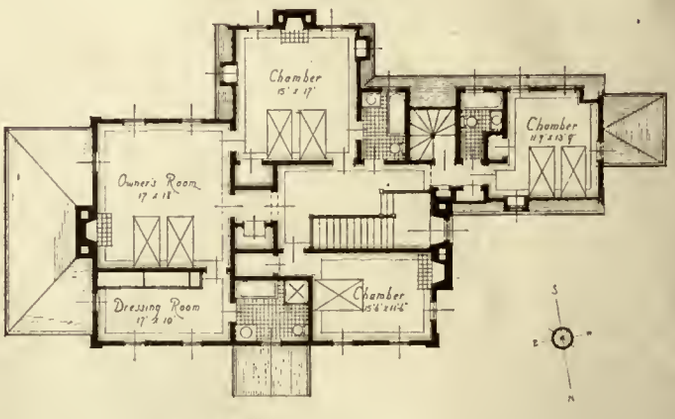
DINING-ROOM.

H. B. Little, Architect.

RESIDENCE, MRS. FRANK E. DODGE, STONINGTON, CONN.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

HOUSE AND PLANS, MRS. FRANK E. DODGE, STONINGTON, CONN. H. B. Little, Architect.

Porto Rican Building

By E. C. Bartholomew

THE art of building with a plastic material is one which has never appealed very strongly to the American mind. It is an art in itself and must be studied in its own rights. A plastic material gives no satisfaction when it is used only as a convenient alternative for another building material. Used with more or less metal reinforcement, the plastic material is transformed into a structural material, and building with it is a science as well as an art.

We of America are so imbued with the building traditions of wood and stone that we attempt to force a plastic material into the traditional forms rather than allow it to find its own individual expression. On the other hand, Spanish builders of the last two centuries, especially as exemplified in Mexican building, have taken advantage of this quality in cement to a degree quite unknown—and one might add undesired—among us. Nevertheless, they have accepted and used it.

Architect's residence, Monte Flores, P. R. Reinforced concrete, old Spanish tile roof, mosaic floors, solid mahogany interior finish. Antonio Nichodema, Architect.

Americans were beginning to realize the building lore and architectural interest in Mexico before the disruption of their late internal disorders. An architect of prominence had suggested that a "Prix de Mexico" might be of greater usefulness to America than a "Prix de Rome," in its local value.

When once we come to realize that concrete is a truly architectural building material with almost untried possibilities in the matter of form, thoroughly tested as to strength; when we accept this and put ourselves to use it, taking advantage, as far as possible, of local materials and conditions, working in entire sincerity, a new architectural era will be upon us. As an architectural responsibility and an architectural problem it is of interest to see how other peoples are meeting it.

From time to time we have had glimpses of work from Porto Rico which has the Spanish understanding of the plastic quality of cement, with a modern acceptance of its possibilities as a structural material. A group of buildings designed by Antonio Nichodema, architect, of San Juan, Porto Rico, shows the adaptability of this material to conditions of that island. All of these buildings are of reinforced concrete, built with wooden forms, the surface being rubbed down to a smooth finish. The architect tells us that it is not customary with them to plaster concrete surfaces. Instead, the concrete is given a color tone by means of the aggregate used, and the surface is rubbed down as the forms are removed. A blue trap rock of excellent quality is used with river sand—if possible—but usually with sea sand and cement, often a white Portland cement of American make. The rock is broken so that with a thin wall it runs from a quarter of an inch in size to the tiniest particles. These screenings give a pleasing texture to the finished surface.

From the exterior many of these houses seem not unlike those seen in the States, but numerous features make them distinctive, owing to the local artistic temperament and the necessities of the case.

The Porto Rican love of color finds expression in faience tile and leaded glass, used to give relief to the plain surfaces of the cement. The use of colored tiles and leaded glass to break up the monotony of large concrete surfaces is both consistent and logical, giving a rich and pleasing effect in design. The Porto Rican is a lover of colors that give strong contrast and brilliant effect, and the clear-cut and strong coloring of faience tile make an especial appeal to him. Tile and glass panels are inserted in outside walls and as decoration for piers and about the entrance of the house, and also give distinction to the entrance to the grounds, set into the piers between which swing the great iron gates. Very effective lighting features are designed in this way, with glass domes or leaded panels. Lights are wired for electricity through an underground feed and controlled from the house. Pro-

Floor plan, architect's residence.

Gate, Valdes residence, facing ocean.

vision is made for the tile and glass insertions when the forms are built, recesses having been made to receive them before the concrete is poured, so that it is all done in a very simple way.

The cool cleanliness of tile makes an especial appeal in a tropical clime, and tile floors are to be found in some parts, at least, if not all the house.

It has long been customary in the Porto Rican home to have large living spaces, well thrown together, and high ceilings, in order to obtain a circulation of air. The separation between living and dining rooms is indicated by a grille or by a wide arch, and the windows are set in groups to get plenty of air. Porto Rican buildings have many windows, to give the much-needed ventilation. Shutters are installed in nearly all window openings. Mr. Nichodema tells us that, on account of the excess of tropical light, opaque glass is used in the windows, usually moss-green or brown cathedral glass, hammered face, to subdue the intense light. The windows are casements, opening out, with a transom usually hinged at the top.

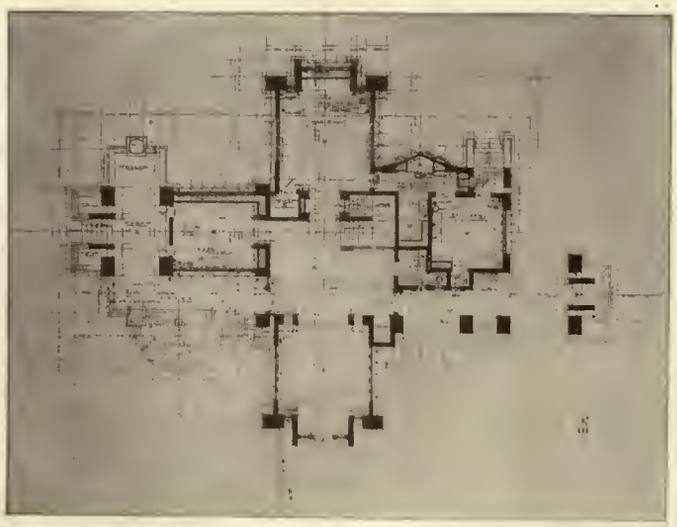
In the matter of construction, reinforcement

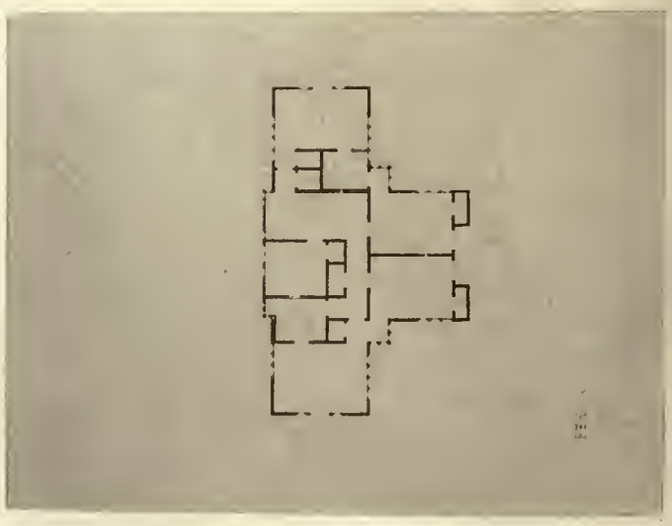
Residence for Sr. Rafael Carrion, Santurce, P. R

is freely used. For some one-story structures under a roof of ordinary wood construction a 4-inch reinforced concrete wall has been poured. While such a wall is durable its compressive strength is rather low; yet builders state that it has proven amply strong in the conditions. To eliminate "honeycombing" the rock is broken very fine for pouring in a 4-inch wall. On account of this difficulty a 6-inch wall is often used. The concrete is poured in courses 3 feet high around the entire outside. The forms are removed twenty-four hours after pouring the concrete, and the wall, while still "green," is rubbed down with a wooden float. In this way the rough spots are eliminated without discoloring the surface.

The footings usually consist of a solid course of concrete. In some cases footings have been

Residence for Madame Luchetti, Condada, P. R. Concrete trimmed with faience tiles, tile roof, cypress finish. Antonio Nichodema, Architect.





Plans, Luchetti residence, Condada, P. R

Fence for Ramon Valdes, San Juan, P. R., made in concrete and mahogany, leaded glass domes and panels for main posts, with inlaid mosaic panels.

Residence for Mrs. C. McCormick.

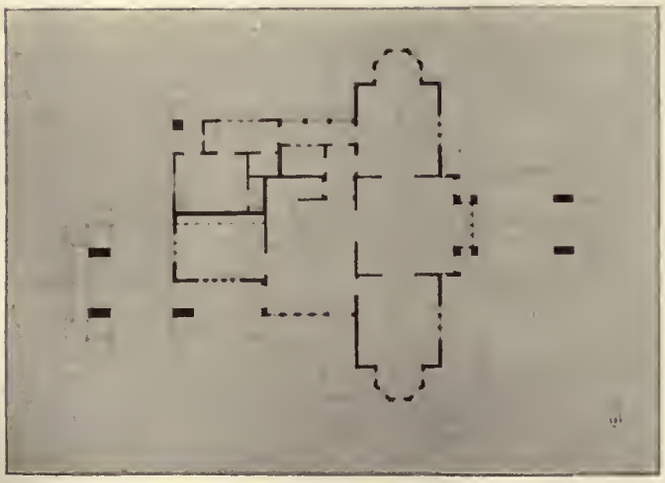
placed in filled ground below the sea-level, and very close to the shore, in soft sand. This has necessitated the construction of a spread footing of unusual width and depth, heavily reinforced, which acts as a so-called "raft" foundation.

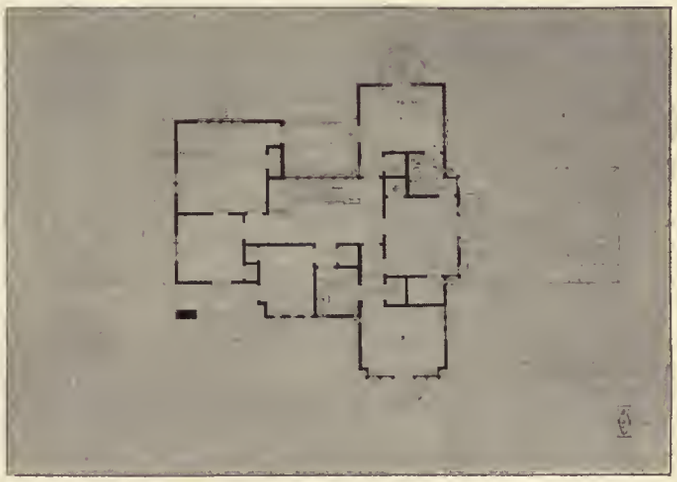
Except where a centre support is necessary, interior partitions are constructed of metal-ribbed wire mesh plastered both sides. These partitions are about 3 inches thick and are laid directly upon the wood floor, the floor joist being doubled under them. They are reinforced at the corners and at the sides and top of door openings with 1½-inch structural channels, vertically, and ¼-inch round rods attached to the wire mesh, horizontally. Where support is necessary a solid concrete wall is poured.

Residence of Mrs. C. McCormick, Santurce, San Juan, P. R. Concrete and terra-cotta, sills of faience tiles, parquet floors, beam ceilings. Antonio Nichodema, Architect.

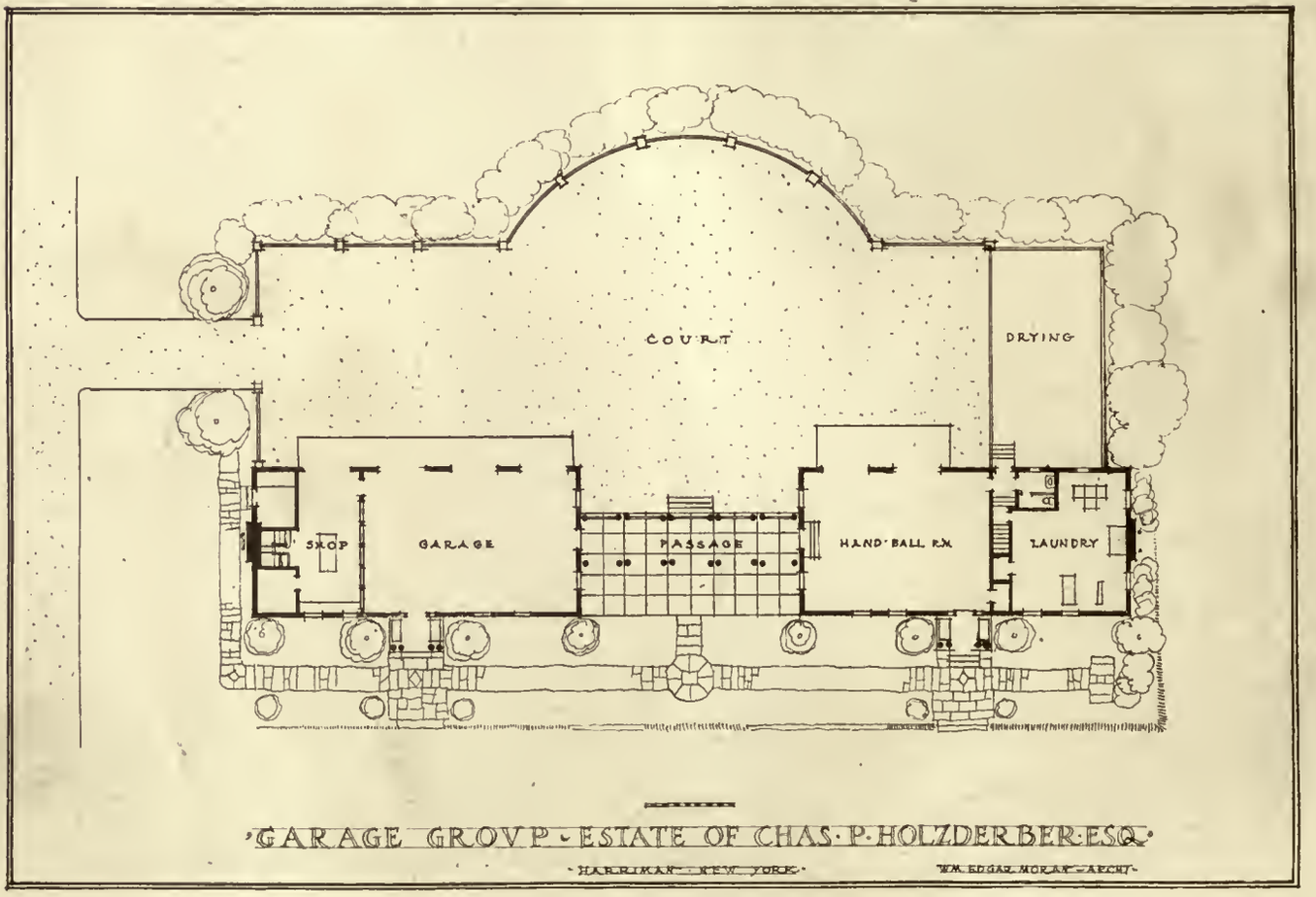
Spanish tile such as are still used in Spain and Italy is the traditional roofing material, laid in the continental way. These tiles are not what we know as "Spanish tiles," but are constructed much more simply, and perhaps are more friable, but are wonderfully picturesque. Modern patent roofings are largely used.

There is an interesting contrast offered by these Porto Rican houses to some of the recent work in California.





Plans, McCormick residence.



GARAGE GROUP - ESTATE OF CHAS. P. HOLZDERBER, ESQ.

HARRIMAN — NEW YORK — WM. EDGAR MORAN — ARCHT.

GARAGE GROUP, ESTATE, CHAS. P. HOLZDERBER, HARRIMAN, N. Y. Wm. Edgar Moran, Architect.

United States Radiators

heat the new

Hotel Cleveland

GRAHAM, ANDERSON, PROBST & WHITE
Chicago
Architects & Engineers

Hotel Cleveland
Cleveland, Ohio

W. G. CORNELL CO.
New York and Chicago
Heating & Ventilating Contractors

UNITED STATES RADIATOR CORPORATION

GENERAL OFFICES: DETROIT, MICHIGAN

BRANCH OFFICES IN PRINCIPAL CITIES

Edwin Howland Blashfield, Painter
Eli Harvey, Sculptor
Charles W. Stoughton, Architect

THE EVANGELINE WILBOUR BLASHFIELD MEMORIAL FOUNTAIN IN THE QUEENSBORO BRIDGE MARKET, FIFTY-NINTH STREET AND FIRST AVENUE, NEW YORK.

ARCHITECTURE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXIX JUNE, 1919 NO. 6

Architecture and the Greenhouse

By Harold A. Caparn

LIKE everything else, the modern greenhouse is a product of evolution. It began in the seventeenth century under the form of glazed frames set in front of a wall on which fruit trees were trained to keep the sun's light and heat within. Also, later, to conserve the heat of a flue within the wall. Then it became a room with windows for the storage of plants in winter like the orangeries at Versailles and elsewhere. Gradually the windows grew larger, but even up to the beginning of the nineteenth century a roof was considered necessary, as it was believed that glass overhead would allow the artificial heat within to escape. As soon as it was discovered that the roof could be glazed as well as the sides without undue loss of heat, the modern greenhouse came into being, the supports diminished to the minimum required to support the glass and, as might be expected, the latest thing in glass houses is a steel frame with the lateral supports almost suppressed, and with even bent panes of glass replacing the old-fashioned eaves. Thus the greenhouse has continually travelled further from the architecture from which it first arose.

Conservatory, house, Mrs. Claude Mecker, Columbus, Ohio.

Greenhouses, as seen by the architect, may be divided into two general classes: the conservatory and the others. The conservatory, whether a part of the house or not, is a place for the board and lodging of exotic plants too sensitive to endure the rigors of our climate. These plants are kept in the conservatory during their period of growth of foliage or flower, and when they fade are replaced by others, so that a conservatory is supplied with relays of plants either by the florist, or from a greenhouse on the property.

The greenhouse is a utilitarian contrivance for the raising of plants to be used elsewhere. Its first use is usually the raising of early vegetables. Next comes the growing of decorative plants for the house. Next the raising of specialized crops, perhaps roses, carnations, cyclamens, chrysanthemums, and so on, which require different temperatures and seasons of growth, so that a single greenhouse of, say, 25 feet by 75 feet is often divided into several compartments in which the different conditions may be obtained.

Ideally, a greenhouse like this is a place in which the daylight of outdoors can all be used, but the temperature controlled. It is not difficult to exclude the light when this is desirable, but it is manifestly impossible to let in more light than the structure will permit; so that anything that impedes the rays of the sun detracts by so much from utility. Thus, all the structural supports, while they make the greenhouse possible, help somewhat to lessen its efficiency. And, as a matter of fact, when the sun is low in the sky and the shadows longer, and this means in the winter when the sun's light and heat are most needed, the supports do interfere considerably with the passage of light. The perfect greenhouse would be an entire crystal, one solid piece of glass.

A structure like this, though thoroughly practical, yet light, transparent, and glistening, with almost all expression of solidity and massiveness that inheres in even a frame building eliminated, is a violent contrast to the impenetrable walls and roof of a house, and the easiest way to manage it is to keep it out of the house picture by placing it on a lower level, or so as to be screened by a building or group of trees.

A curvilinear conservatory within ten feet of the residence, with workroom in the rear.

Although many greenhouses are handsome structures with their large curves and vast translucence, yet the greenhouse is a kind

T. T. Watson, St. Davids, Pa.

John S. Jenks, Jr., Chestnut Hill, Pa.

of negation of architecture. Ever since stone and brick came into common use, architecture has come to be thought of as solid and impenetrable walls and roof, with relatively small windows. You may have architecture without windows, but not without walls, or their equivalent. But the greenhouse reverses this order of construction. It has no solid walls or roof; it is one huge window. So that it becomes difficult to classify even such a superb thing as the greatest of glass houses, the Crystal Palace at Sydenham, England, among the varied works of the great builders of the world.

A small conservatory with curved glass eave, erected for St. Peter's Cathedral, Scranton, Pa., providing for constant flower supply.

Though the greenhouse goes on increasing in beauty and variety of design, it naturally gets further away from the feeling of the house instead of nearer to it. It becomes continually lighter, while the house remains about as massive as it always was. When an architect has to design a conservatory as part of a house, he makes the construction as massive as the needs of the plants will permit. He hates to see a frozen bubble as part of his structure.

Thus, although there are many small conservatories forming fitting and integral parts of houses, it is difficult to make a successful union of a modern greenhouse with a building of masonry. And the surest way to make a fitting union is to keep them far enough apart to prevent their disagreeing.

This does not mean that, a glass house may not be successfully grouped with buildings of other kinds. The

Side view of conservatory, residence, Capt. De Lamar.

Conservatory and greenhouse attached to residence, W. P. Worth, Coatesville, Pa

Greenhouse and conservatory in relation to residence, Daniel J. Reid, Irvington, N. Y.

conservatories of the Brooklyn Botanic Garden prolonging the line of the Laboratory Building are an example. And instances are not rare of conservatories on the axis of other buildings, but far enough away to avoid grouping from the usual points of view. One can see one from the other, but not both at the same time, so they do not conflict.

Missouri Botanic Gardens.

Nor does it mean that an attractive and appropriate setting of the most transparent kind of greenhouse cannot be designed. As a greenhouse is a structure for the production of exotic plants and flowers to be used elsewhere, so there is no more fitting place for a cutting garden, that is, a place for the raising of flowers for cutting, than outside of it. And if it is possible to get a background of trees—the really indispensable background for any kind of structure in the country—with a well-designed foreground of flowers, the whole composition may be entirely harmonious and pleasing.

Again, inasmuch as the greenhouse is so often used for the raising of vegetables out of season, its natural place is near the garden where vegetables are raised in season. So that one might say that the ideal site for the greenhouse with the cold-frames and hotbeds would be in close relation to both the cutting and vegetable gardens. Thus we get all these utilitarian things—greenhouses, gardens, cold-frames, and workrooms—grouped where they will form the most efficient and manageable apparatus for the production of flowers and vegetables all the year round, and where they will look most appropriate.

Such a composition should, as far as possible, be set in foliage. Under no conditions does a conservatory look so well as when partially concealed by trees. Nothing else will mitigate its vitreousness. When there are no existing plantations suitably placed, they should be made. They should be placed so that they will not overshadow the greenhouse, yet be in proper relation. And, after all, there is a certain fine and sumptuous look about a handsome glass house, properly led up to and set, that is all its own, and lends much charm and dignity to a country place.

Such a layout as is suggested is, of course, only possible on an estate of considerable size, and in such case the greenhouse problem is comparatively easy. As the grounds contract and buildings come closer together, a satisfactory solution becomes more difficult, though the same general principles obtain. And it is inevitable that many attempts have been made to combine the dwelling-house and the plant-house, though never very successfully, as it seems to the writer.

Grouping of buildings and greenhouses in architectural design, C. A. Coffin, Locust Valley, L. I. Howard Greenley, Architect.

Greenhouse, Johns Hopkins University, Baltimore, Md.

Attempts are often made to bring the greenhouse into the realm of architecture by designing that necessary adjunct, the workroom, with much care. Some designers have made attractive little structures of stone or brick, but the effect seems to be rather to separate the workroom from the greenhouse, and the less pretentious frame workroom looks more in character. The reader can form his own judgment from the illustrations.

For the greatest number of uses it is considered best that a greenhouse should run north and south or thereabout, so that the sun may reach both sides alike during the day. Some specialists consider that there is merit in turning it a little to the west so that the early morning sun may reach it more directly; but refinements like this are probably of imaginary value. For roses, which require an exposure to the southern sun, an east and west orientation is best. But in fact, a span-roofed house, that is, one with the roof pitching both ways, may be successfully run with almost any orientation. But a lean-to, that is, a one-sided greenhouse with a glass roof resting against a wall, must be placed so that it will receive a good share of direct sunlight. It is not possible to go into the question of orientation deeply here, and any one having unusual conditions to meet is advised to consult a specialist on greenhouse construction.

Greenhouse grouped with cottage and garage, Pierre S. Dupont, Mendenhall, Pa.

A word about the interior of the conservatory may be in season. The stereotyped way of setting the plants in rows on benches is quite reasonable from the practical point of view of raising as many plants as possible in a given space; but it is the least effective way of displaying plants of unusual size or character. These may be planted, not in pots or tubs, but in soil on the conservatory floor, and arranged in naturalistic combinations to produce striking effects of tropical landscapes, as is done with so much success at the Missouri Botanic Gardens at St. Louis.

Can Reims Be Rebuilt?

The age of styles is dead . . . the cathedral-building era is dead. The spirit of architecture has closed her wings, and sleeps. Gone is the enthusiasm that erected Notre Dame, Amiens, Beauvais, Rouen! The sacred fires that breathed life into their art are damped out in a modernism that finds no place (and no money!) for the creation of those marvellous fabrics which the wild ages have left us, and which the engines of war have laid low. Restoration is only practicable and desirable to a certain degree. Can Reims be rebuilt—or should it be? The genius of Robert De Courcy cannot be invoked, nor can Clovis come again to baptism.

From "The Glory of Gothic Beauvais Cathedral," by Captain Robert Cromi, in The Architectural Review, London.

Macomber & Whyte Rope Company's New York Branch

The Macomber & Whyte Rope Company, manufacturers of wire rope and wire, at Kenosha, Wisconsin, announce the opening of their New York branch, at 30 Church Street, New York City, telephone Cortlandt 7436, under the management of Mr. E. E. Robirds, who has been successively manager of the Pittsburgh and Chicago offices before the opening of the New York branch.

Mr. Robirds takes charge of a competent staff of wire-rope men in New York City. They also announce the opening of their Birmingham, Alabama, branch, under the direction of James A. Boope, Southern manager, 805 American Trust Building, Birmingham, Alabama.

Prompt service is assured by a complete stock of wire rope, both black and galvanized, in all the sizes, grades, and constructions, as well as galvanized strand, sash cord, clips, thimbles, hooks, sockets, couplings, etc.

About Malleable Iron

A treatise on "Malleable Iron" is issued gratuitously by The American Malleable Castings Association, headquarters, Cleveland, Ohio.

Phenomenal progress has been made in this particular industry during the last few years.

This booklet—a forerunner for a comprehensive volume to be issued later—is filled with valuable data.

It is divided into three parts: Part I, "What Is Malleable Iron?" Part II, "The American Malleable Castings Association." Part III, "The Uses of the Malleable Iron Casting," "Can Heavy Sections of Malleable Iron Be Completely Annealed?" "The Skin of a Malleable Iron Casting," "Malleable Iron Castings Resist Rust."

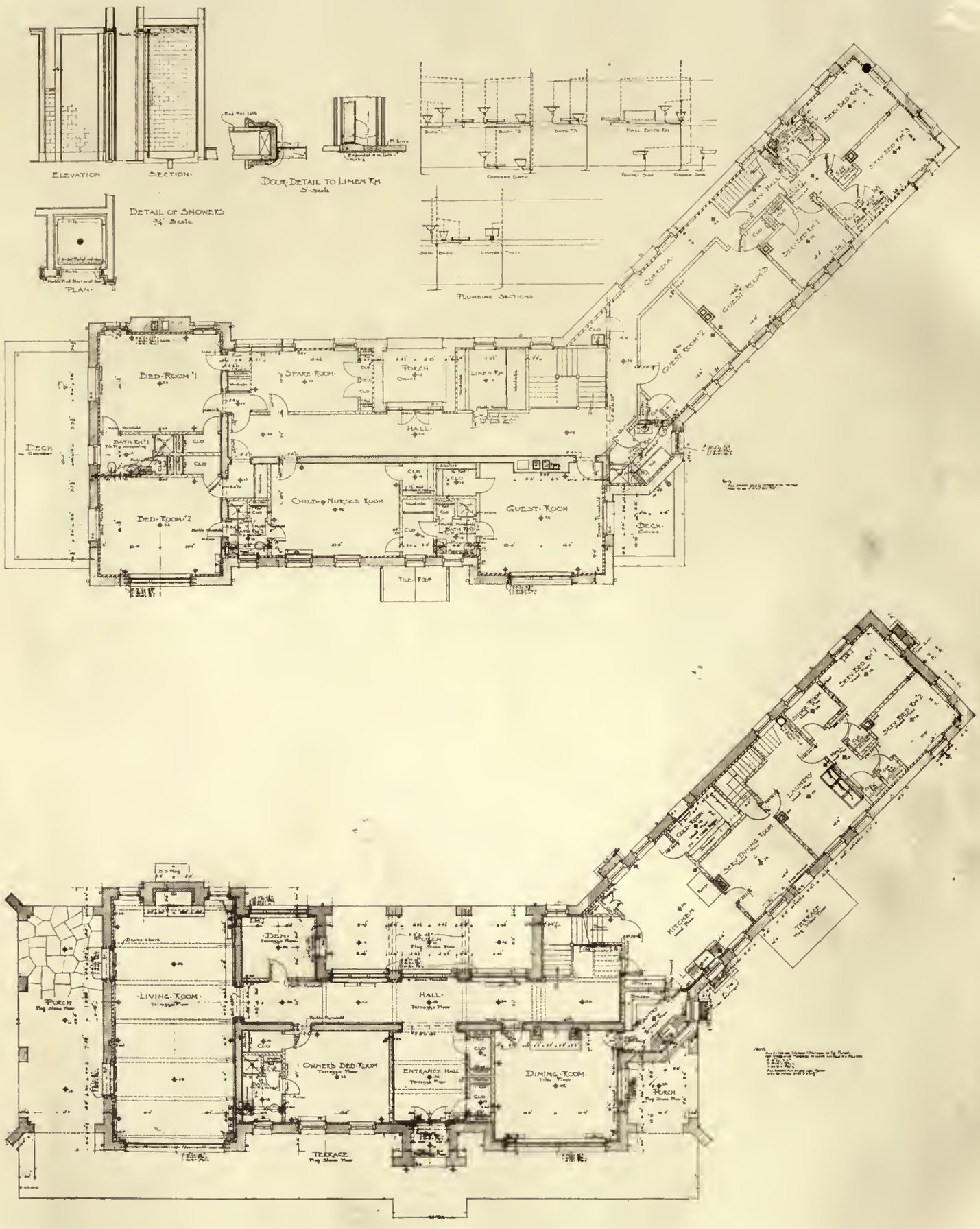
A copy of the book will be sent to any one addressing the association at Cleveland, Ohio.

FRONT.

REAR.

Edward Langley, Architect.

RESIDENCE, J. W. JOHNSON, CRYSTAL LAKE, PA.



PLANS, RESIDENCE, J. W. JOHNSON, CRYSTAL LAKE, PA. Edward Langley, Architect.

LIVING–ROOM.

DINING–ROOM.

Edward Langley, Architect.

RESIDENCE, J. W. JOHNSON, CRYSTAL LAKE, PA.

Floor and Wall Tile, Their Mission and Application

CLAY tile have been known from the earliest historical periods and have been made and applied in every country of the world.

The qualifications required of clay tile are: first, durability; second, artistic quality; third, aseptic or sanitary properties; fourth, atmospheric resistance (frost and weatherproof). To these qualifications has lately been added an ever-increasing demand for "non-slip surfaces."

Tunisian tile panel in lobby, Hotel Commodore, New York.

We will try to analyze these various qualifications in the sequence mentioned.

Durability, in respect to physical or mechanical resistance of a clay tile, is unquestioned, providing the body composing the tile is of a strong and tough character burned to at least partial vitrification. A tile should be hard enough to resist the scratching with a hardened steel point and it should give a decided ring when tapped with a hammer. A tile burned to entire vitrification is the most durable tile as far as abrasion is concerned, but a tile having from one to two per cent of water absorption is practically as hard as the vitreous tile, and instead of the well-known brittleness of vitreous tile, which is apt to cause a break or spalling on the edges and corners, it is much tougher and will give the best satisfaction. The preparation of the material is also to be considered in this paragraph. Tile made of a plastic material will always attain a closer and more cohesive structure than tile prepared of dust, and for certain purposes, especially where violent concussion of the surface of the floor or where it is subjected to frost or moisture, plastic body is preferable to the dust-pressed product. Tile which do not answer to the above specifications should not be used in floors, as an under-burned tile will rapidly wear out. Care should be taken that all tile are of about the same hardness or density, so that the wearing of a floor should not produce a corrugated or uneven surface.

The artistic phase of tilework depends principally upon its proper application. Where tile of more or less ruggedness or more refined finish should be used is a matter for the architect to decide. As tile has been made in every period and applied to every architectural style, it is not difficult to select the proper texture to conform and harmonize with the buildings or spaces to be tiled. Buildings of a mediæval style would naturally call for a tile of a rugged character, etc. It may be said that tile-makers have lately endeavored to work in the direction of a more artistic material, as they realize that the mechanical dust-pressed tile, while admirable in a strictly mechanical sense, lack the decorative qualities of the plastic hand-made article.

It has been found that the former anxiety to produce tile of a perfectly even shape and color was a misplaced effort, as tile showing the actions of the fire present a very much more artistic appearance. It may also be said that natural-colored clays are coming more and more in the foreground, so that the kaleidoscopic efforts of the former so-called "common encaustic tile" has been discarded. If interesting features are desirable, decorative inserts, panels, and selected textures in borders or fields of the tile are established with excellent success.

The texture of a floor or a wall depends mostly upon the units of tile applied, and this again is an artistic problem which must be solved by the architect. As a rule, the design of the floor follows the constructive layout of the building, so that columns and pilasters are usually connected with borders and certain parts are treated with separate panels, etc. In this manner small units can be applied with very fine effect, as the large fields, borders, and panels will conform with the proportions of the building. The use of large tile for a large floor is now considered a rather questionable conception. We know that a huge tower or wall is built of the small units of brick without losing its massive appearance, and so a very large floor or an extensive wall may be laid in small tile units for the same reason.

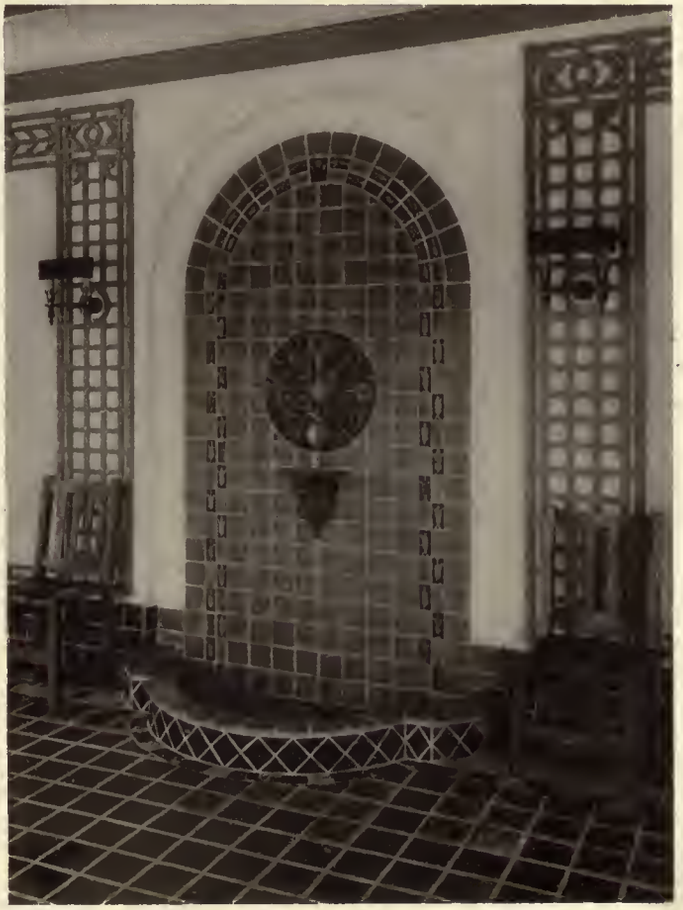
Tile radiator grille.

All clay tile are aseptic or sanitary if they are burned to sufficient hardness, whether they are glazed or unglazed. A hard-burned tile

FLOOR TILE IN ST. BARTHOLOMEW'S CHURCH, NEW YORK. Bertram G. Goodhue, Architect.

FLOOR IN CLEVELAND ART GALLERY.
Touraine Quarry field in Travertine color. The ornamental part in Tuscan glazes and Tuscan inlay decoration. Arthur Loomis Harmon, Architect.

FLOOR DESIGN, IN TUNISIAN TILE.
EVERGLADES ROD AND GUN CLUB, PALM BEACH, FLA.



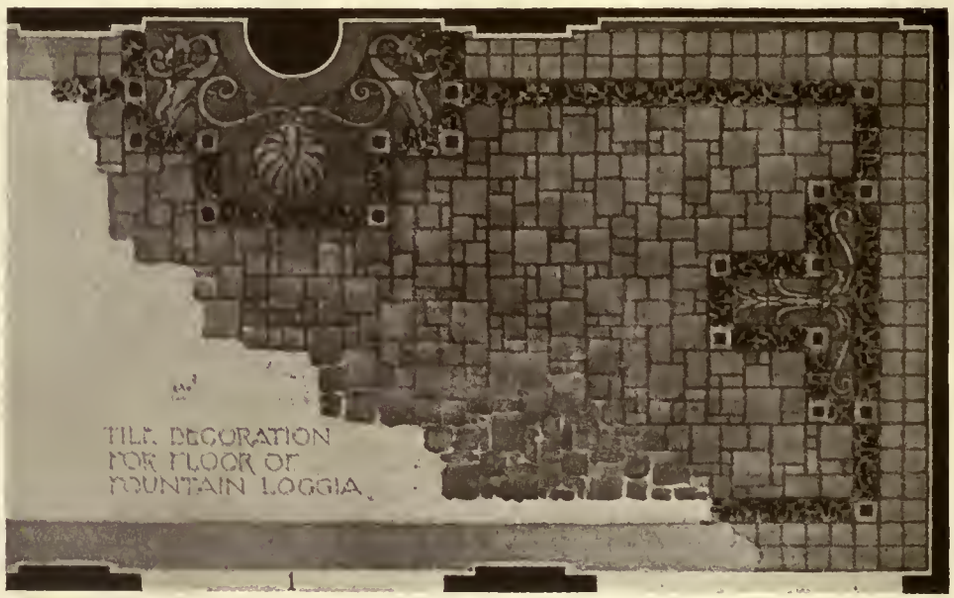
TILE FOUNTAIN.

Faience walls, Sewage Pumping-Station, Brooklyn. A. L. Martin, Architect.

is so dense that no microbes or lichens can grow or multiply on its surface, but for strictly sanitary rooms, such as operating-rooms in hospitals, bathrooms, etc., the walls are usually veneered with glazed tile. This presents a positive aseptic surface which can be easily cleaned. For bathrooms the white wall tile has been broadly adopted, but lately a desire for a warmer and more comfortable treatment of the private bath has become manifest. The glaring white cold bathroom does not appeal to a more refined taste, and in its place green, brown, and yellowish combinations of color have been used for floors and walls with very good artistic success. The color does not interfere with the aseptic properties or the ease of cleaning. It is of great importance that tile are set securely on the wall, so that no hollow spaces occur between the tile and wall, and it should be of greatest importance that all joints are well filled with strong cement mortar. It may be said in this connection that an ample joint is really more aseptic than a very close joint, as an ample joint can be more securely grouted than too close a joint, as the grouting in too tight a joint will sometimes bridge over an empty space and afterward fall off, allowing an open joint where dust and microbes can accumulate. If this joint should connect with the hollow space back of the tile the danger is obvious, especially as such spaces cannot be cleaned.

A piece of tin or even a piece of glazed paper is aseptic in itself, but in applying it to the wall it is impossible to effect a perfect cohesion and while in such a case the surface may be absolutely sanitary, the wall itself is very far from being so.

Atmospheric conditions in our country are such that the greatest care must be taken in selecting materials for exterior use. We have in many of the cities an atmosphere filled with sulphuric acid on account of the coal smoke. This acid is responsible for the disintegration of marbles, so that colored marbles soon lose their freshness of appearance. Tile may be considered as belonging to two classes in this respect: for decorative use, as on the exterior of walls; and for more practical use, as floors on exposed porches. For decorative purposes color is essential, and the colored faience tile, which can be furnished in any desirable shape and reasonable size, form the most extensive medium of exterior decoration, providing that they will not disintegrate by frost. Other influences cannot harm the tile or change the colors. There is only the frost, which will positively disintegrate the tile by spalling off the glaze unless every precaution is taken to avoid it.



Italian style, executed in faience. Field composed of odd sizes. Ornamental border of Tuscan inlay design. The panel decorations are in the style of the Opus Sectile.

It is extremely hazardous to use a so-called "dust-pressed mechanical tile" for this purpose, as even very hard and dense dust-pressed tile have spalled. The hard-burned tile made of a plastic material has withstood frost under the most trying conditions, and it is the only glazed material which can be recommended with perfect assurance.

The possibilities of polychrome gives tile a precedence over any other material that is not wholly an applied decoration. Where the architect is seeking to combine decorative quality with permanent construction, he finds in tile an imperishable structural material capable of a wide range of color and adaptable to original design or to copies of old work.

Editorial and Other Comment

Still Room for the Word Art

NOTHING like hard times to reveal the defects of any business, or to set men thinking along new and constructive ways. In times of peace and easy going we are apt to let well enough alone and to be content with old methods and old traditions. Many men have had to wait for the middle years to find themselves, and one of the by-products of the war was the searching out of men too old to fight and to put them in the way of new enterprise and new opportunities. During the war we were hearing many of the troubles of the architects blamed on so-called obsolete methods, and the Institute came in for its full share of criticism. "Old ways must go. Times have changed. Architecture has ceased to be thought of as an art. It is a business, and the professional man who clings to the teachings of the past must put aside all such stuff, put beauty from him as he would the de'il behind him, and build as a builder, with science as his boss and the engineer always as his side partner." There was a lot of good sense in some of this talk, and out of it, no doubt, has come better co-ordination between the practical man and the so-called dreamer of mere dreams.

There are few architects worthy of the name, however, who would be willing to admit that art has no place in their products. Do we not all of us find that Mr. Gilbert's great Woolworth Building is a thing of beauty as well as a commercial success as a mere building? There is no reason for ugliness even in commercial art, and we are slowly waking up to this fact, not only in architecture, but in our industrial and applied arts.

Educating the Public

MR. MAGONIGLE'S recently well-taken point is worth keeping in mind about the education of the public. With a reverse English on the proposition, he rather put it up to the architect.

We like his Suggestion No. 7: "The study of design as such should precede the selection of a career as architect, painter, sculptor, or designer in the crafts, that up to a certain point the training of the architect, the painter, and the sculptor should be identical would seem to confirm our view that the architect may still be an artist and find a place for himself in our very modern world.

And Conviction No. 2: "That if architects, architecture, and the practice of architecture are in the mess they are alleged to be, it is because architects are superficial, selfish, half-baked, and far less than half-educated."

There has seemed no sufficient reason for damning the profession in general because here and there some one has taken his "half-baked" art too seriously, and omitted to mix with it a practical knowledge of some of the material things upon which business success in any profession is founded.

The dear public likes to follow a competent leader, and the more good architecture is put before it the wider will be its appreciation. Show him what's what. There is no finer field for this campaign of education than in the present overwhelming demand for good domestic architecture, the building of homes. Thousands are going to be built. May we be saved from the "old vintage" things that clutter up our suburbs all over the country. Great credit is due the architects who have designed some of our industrial war towns. They have taken them out of the old-time rows of unseemly and unwholesome barracks and given us houses with individuality and claims to beauty and family privacy.

Wait Awhile

MR. CASS GILBERT in his recent address before the American Federation of Arts at the Metropolitan Museum of Art, New York, urged strongly the need of waiting before plunging ahead with war memorials involving the expenditure of large sums of money. The mood of the moment, born of however worthy sentiment, may, as the years go, become only another shrine and embodiment of wholly bad taste as well as bad art. Let us wait awhile. By waiting we shall better appreciate the great deeds of our army, the great sacrifices of those who stayed at home, have time to sift from the mass of proposed war memorials those that shall be worthy of the cause our soldiers fought and died for.

The Professional Idea

AT the fifty-second annual convention of the Institute at Nashville, the memorable address of the occasion, according to the *Journal of the American Institute of Architects*, was that by Mr. John Bell Keeble. "It swept like a great, harmonious piece of orchestration over the whole scale of the professional relation, a scale built up through the silent, patient, and mostly obscure devotion of men who have worked in all callings and through all ages, true servants and faithful disciples of the professional idea."

"If professionalism is to endure," said the president of the Institute, "I believe its disciples must awake to the menaces of the all-absorbing commercial tidal wave that seems to be upon us."

We find pleasure in quoting this extract from Mr. Keeble's address:

"Now, there are certain definite things that we know about the professional life by which we judge it. And in discussing that we must remember that professional men ought, not only in their own lives, to demonstrate these fundamental principles that are determinative of all classification of professions, but to stimulate in others the development of those qualities. And one of the first things is this —that it is generally regarded as necessary for a professional man to have more or less general culture. A man can build a railroad without culture, in the sense of a financier; he can finance a railroad or he can operate a railroad without culture; a man can establish a great bank or a great financial system without culture. But it is a very difficult thing for a man to be a real architect, or a real lawyer, or a real physician, or a minister of religion without general culture, either acquired in his youth or acquired in his maturity, alone, and under greater obstacles.

"I am not one of those men who believe that culture is only obtained in a college. In fact, the modern college does not turn out as many cultured men as I would like to see it turn out. It has gone most too far in the showy and in that physical indulgence of youth in athletics and pleasures which attract the attention of the commonplace in the world.

This, perhaps, stimulates gifts but does not, in my judgment, sufficiently stimulate culture. We take pride in our callings, in that we recognize that you and I and those who come after us in our professions can never reach the real standard that we sought without giving a great deal of attention to the acquisition of general culture."

With such ideals there seems to be little danger of the profession of architecture falling from its high estate, from losing its place in the sun, from becoming merely "a job." As an art it will be always, as it has been, the expression of individual taste and knowledge, of personal culture, let us say; and by culture we do not mean to express a meticulous and affected "niceness," but the full and trained mind where judgments are founded on true perception and knowledge.

Some Valuable Facts

WE call attention to the article in this number by Mr. Richard P. Wallis, and particularly to the valuable accompanying charts and diagrams that give the facts regarding the building situation. He takes the question of building out of any mere theoretical discussion, and bases it on statistics that seem incontrovertible. We are pleased to say that we hear most encouraging reports from various sections of the country, and the period of watchful waiting seems to have about passed. The need of homes, of places for people to live, is becoming desperately insistent. A beginning has been made in the right direction, and we firmly believe that progress will continue with constantly widening expansion.

Tradition Will Always Be Respected in Good Architecture

Although to-day both practising architects and the critics who interpret the views of the public are engaged in conference anent the right policy for the development of architecture as a fine art, consensus of opinion favors a reverent attitude toward the achievements of the past. This in itself is a victory for those who believe in the continuance of tradition, and it should be borne in mind that the term "traditional architecture" is no longer fettered by insular prejudices. To-day such irrelevant questions as place of origin, period, style, or other purely local characteristics, are not allowed to influence the quest for correct form. The whole musical scale of architecture belonging to the world's history offers itself for comprehensive study; we can measure the qualities of one set of buildings against another, we can choose the finest models to add to our repertoire, and quote examples and authorities in support of our theories. Our power of conception is of necessity limited to a reconstruction of the various forms we have had experience of.

The wheels of architecture move slowly, in spite of abortive attempts to accelerate speed. There is only one definite course by which architecture can be advanced, namely, a tireless study of composition. Sir Joshua Reynolds in his "Discourses" dwells insistently on this, in so far as it relates to the art of painting, and his theories are equally applicable to architecture. The study of composition was the one absorbing occupation of the artists of the Renaissance, who, working on material offered by the ruins of Roman splendor, achieved fresh groupings, more subtle detail, and a literal return to the classic spirit of the senses and understanding. From an introspective study of history and a logical application of the best models such research affords, there must inevitably result a continuance of tradition, and, moreover, an extension that is vital. Conception and composition are practically synonymous terms; construction is a factor complementing the two former, for a building of true architectural pretensions is always conceived in embryonic mass long before the problems of construction are entered upon.

It is now accepted that the invention of an entirely new mode in architecture, by any one individual, is an impossibility; for building expression is the language of many, and to be understood it must conform to rules generally acknowledged. In support of this contention we put forward the achievements of those who have paid homage to tradition, and contrast them with the productions of those who have mutinied against discipline. The mutineers, forced by the urgency of the position to declare their policy, submit casual propositions for a new order of things, which, on investigation, invariably prove to be a travesty of the rules they wished to avoid. There are others, and they are the more dangerous, because their zeal for speedy recognition leads them to ignore the conventions.

Architecture is a fascinating subject to write about; a facile pen will cover reams of paper; but the practice of architecture is the most secret of the arts; one must never be content with a first impression or obscure one's sense of fitness by attractive sketching.

From The Architectural Review, London.

Prizes in the American Housing Competition

The American Housing Competition inaugurated by the *Journal of the American Institute of Architects* and the *Ladies' Home Journal* has been judged by the jury, and two second prizes of five hundred dollars each were awarded to:

MILO HASTINGS, New York City,
ROBERT ANDERSON POPE, New York City.

In making this award of two second prizes, the jury was governed by the fact that, while the theses submitted, in both cases, offer a thorough analysis of the causes and cure for the housing problem as it now exists in the United States, the physical plans submitted did not fully provide for the application of the principles set forth in the theses. It was therefore decided to award two second prizes, since the jury was unwilling to make a discrimination between the theses of Mr. Hastings and Mr. Pope. Of the other twenty-nine submissions, those of merit contained analyses and solutions which largely coincided in principle with those to which the two second prizes were awarded, but failed in quality of presentation.

The New York Society of Architects

At the last annual convention, held recently, James Riely Gordon was again unanimously re-elected president, for the fourth consecutive term; Louis E. Jallade, of New York, was elected vice-president; Edward W. Loth, of Albany, second vice-president; Henry Holder, of Brooklyn, treasurer; Frederick C. Zobel, of New York, secretary; and Walter H. Volkenning, of Brooklyn, financial secretary. Directors for three years, James Riely Gordon, Henry Holder, John Bergeson, Hugh Tallant, and Louis E. Jallade, and for one year, Nicholas Serracino and Frederick C. Zobel.

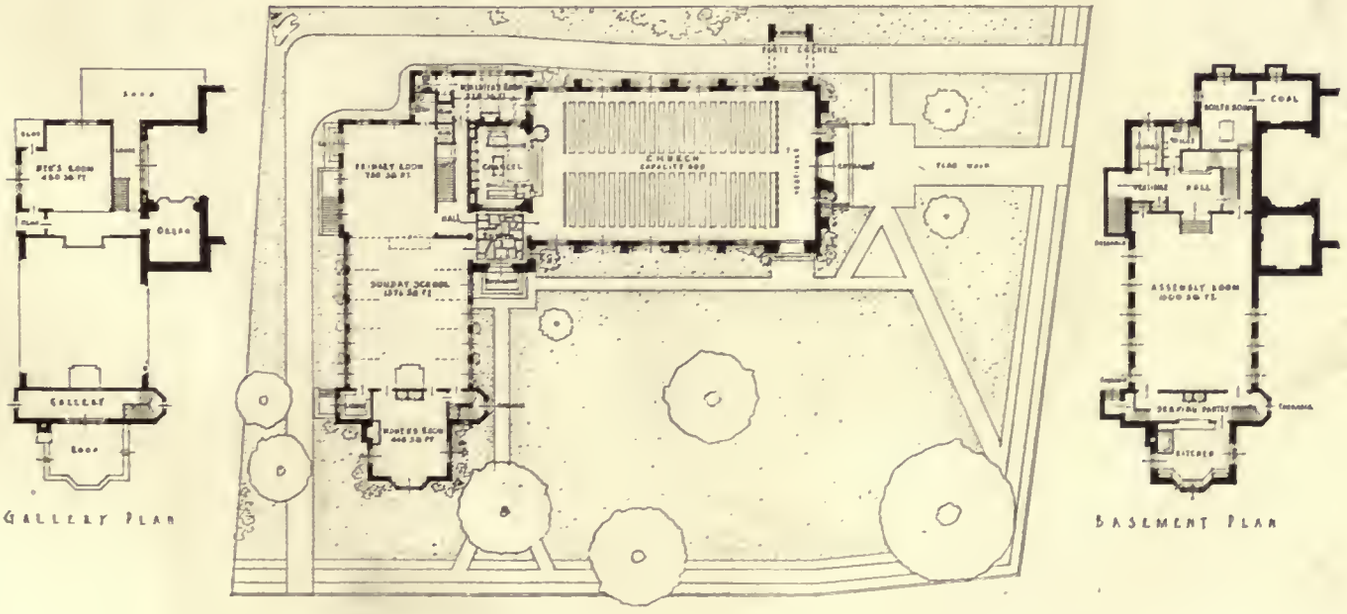
There were many interesting discussions. The consensus of opinion was that the present prices of labor and material will remain, and that this is the most advantageous time to build, in advance of the great amount of building which will undoubtedly be inaugurated before fall. Many important steps are in contemplation this year for the future welfare of the architectural profession. The society is heartily co-operating with other architectural societies, and with real estate and building organizations allied with the profession.

THE CHANCEL, HUGUENOT MEMORIAL CHURCH, PELHAM MANOR, N. Y. Francis A. Nelson, Architect.

THE HUGUENOT MEMORIAL CHURCH, PELHAM MANOR, N. Y.

Francis A. Nelson, Architect.

AUDITORIUM.



FLOOR PLAN.

Francis A. Nelson, Architect.
The Latimers, Landscape Architects.

THE HUGUENOT MEMORIAL CHURCH, PELHAM MANOR, N. Y.

THE WOMEN'S CITY CLUB, 22 PARK AVENUE, NEW YORK. McKim, Mead & White, Architects.

The Women's City Club at No. 22 Park Avenue is typical of the late Stanford White's most inspired work. One of a unit of three houses designed by Mr. White for his sister, Mrs. Prescott Hall Butler. It is illustrative somewhat of the monumental type of architecture Colonial in detail. Exteriorly it is a good example of group building designed to give architectural unity to a certain neighborhood. Built of Milwaukee brick, with the round bay common to so many Beacon Street houses in Boston, it expresses both dignity and domestic comfort, and the wrought-iron balconies from the first-story windows and over the entrance-portico lends an enlivening spirit to the façade.

MANTEL IN THE DINING-ROOM, WOMEN'S CITY CLUB, 22 PARK AVENUE, NEW YORK. McKim, Mead & White, Architects.

The original dining-room on the first floor also used for the same purpose by the club is unusual in many respects. It is nearly circular and the walls are covered with dark brown leather applied in panels and studded with brass nails. This was Mr. White's own idea and with the handsome mantel of Istrian stone and Sienna marble imported from Italy forms a wonderfully rich and effective apartment. The lighting fixtures here as elsewhere were specially designed for their respective places.

The large front room on the second floor with the bay is still used as a drawing-room and retains much of the handsome furnishing belonging to the house, notably some rare old paintings, one by Fortuny. The combination of Italian Renaissance and Colonial is carried out with fine effect here, Corinthian pillars and pilasters in groups lending a decorative aspect that goes to make the room one of the most charming ever designed by Mr. White.

ENTRANCE-HALL. McKim, Mead & White, Architects.

THE WOMEN'S CITY CLUB, 22 PARK AVENUE, NEW YORK.

The entrance-hall reached from the street level is treated architecturally. The mantel, imported from Rome, is of Italian Renaissance marble. The pillars support the cornice, separating it from the stairway well and the tiled floor. Italian seats flanking the fireplace produce an atmosphere of palatial grandeur which is emphasized by fine modelling of the white panelled walls in Georgian motifs.

THE WOMEN'S CITY CLUB, 22 PARK AVENUE, NEW YORK. McKim, Mead & White, Architects.

One of the most beautiful features of the club is the staircase which carries out the monumental aspect of the type in the broad treads and easy rise as it is carried by two turns to the upper floor. The hand-carved balusters, three designs in repeat, are exquisite and, associated with the Renaissance columns upholding the cornice and entablature on the second and third floors, form a notable detail.

A detail of the mantel and over-mantel in the drawing-room showing the treatment. Corinthian pilasters upholding a cornice and entablature frame the fireplace and create a decorative effect that give the key to the architectural scheme carried out in this perfectly proportioned and charmingly simple apartment.

THE ADMINISTRATION BUILDING, FISK RUBBER CO., CHICOPEE FALLS, MASS. Geo. B. Allen, Architect.

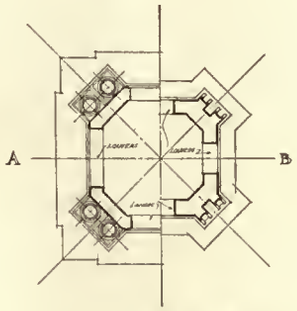
PLAN
MAIN FLOOR AND GALLERY

SIDE ELEVATION

FIRST REFORMED CHURCH
ALBANY · NY ·
Ph Hooker ~ Architect
~1797~

Restored By
J. L. Pearman. 10.

164



PLAN OF TOWER
AT A & B

PEARL ST. ELEVATION

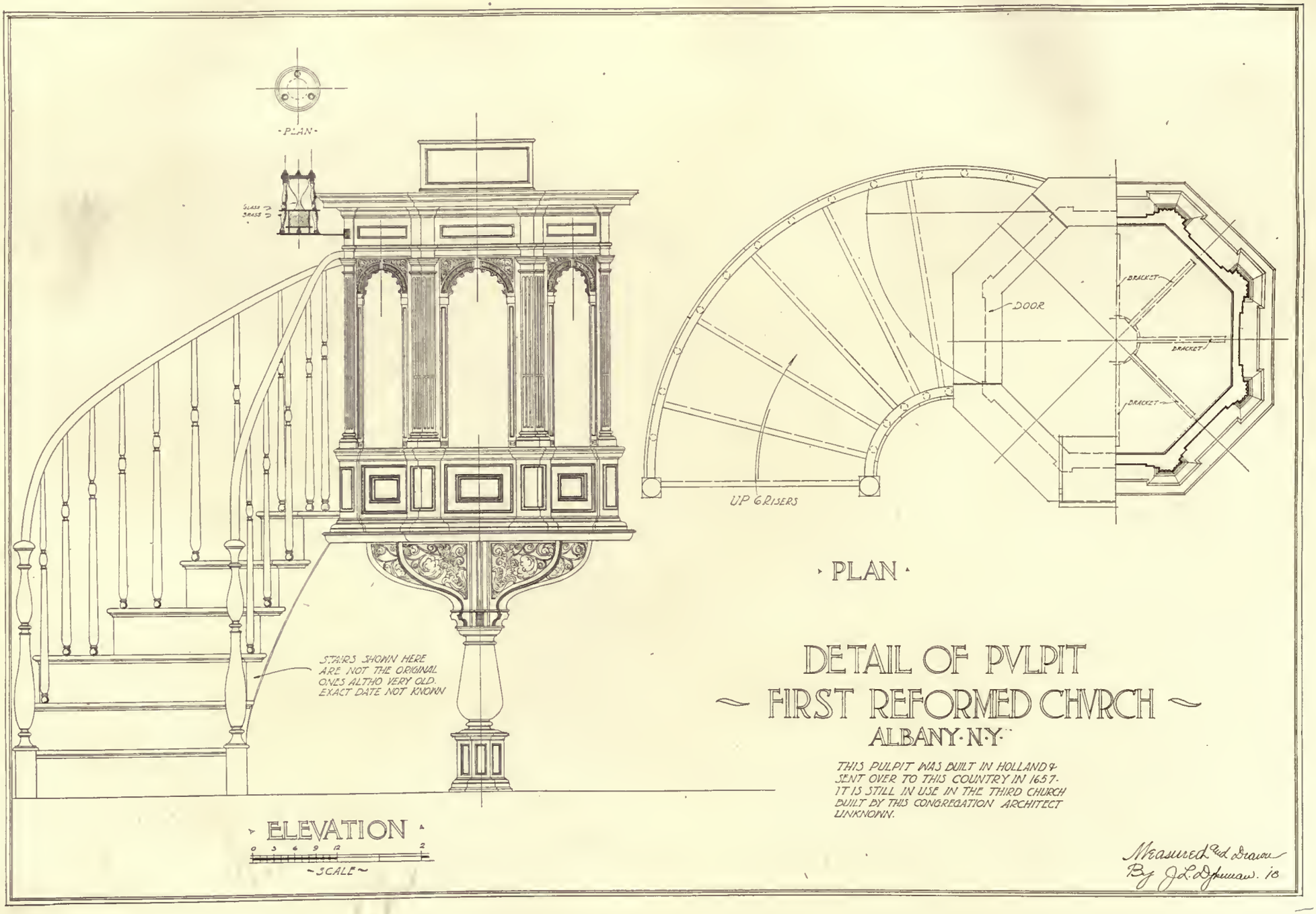
FIRST REFORMED CHURCH

(NORTH DUTCH)

ALBANY N.Y.

Ph. Hooker - Architect
-1797-

Restored By
J.L. Depeyster - 1910.

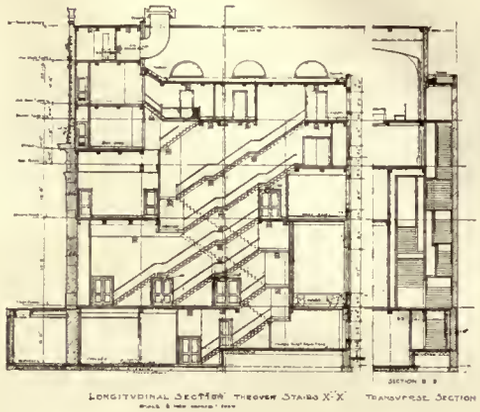


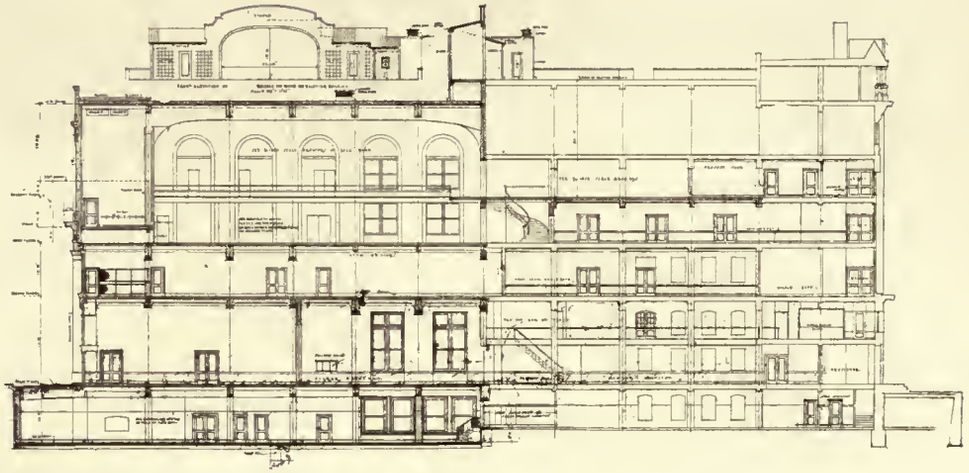
DETAIL OF PULPIT
FIRST REFORMED CHURCH
ALBANY · N.Y.

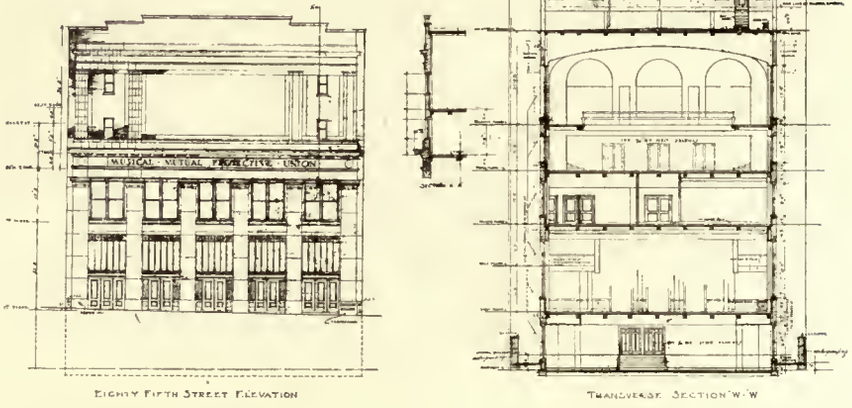
THIS PULPIT WAS BUILT IN HOLLAND & SENT OVER TO THIS COUNTRY IN 1657. IT IS STILL IN USE IN THE THIRD CHURCH BUILT BY THIS CONGREGATION ARCHITECT UNKNOWN.

Measured and Drawn
By J. L. Denman. '18

EAST 85TH STREET ADDITION.







ELEVATIONS AND SECTIONS.

Trowbridge & Livingston, Architects.

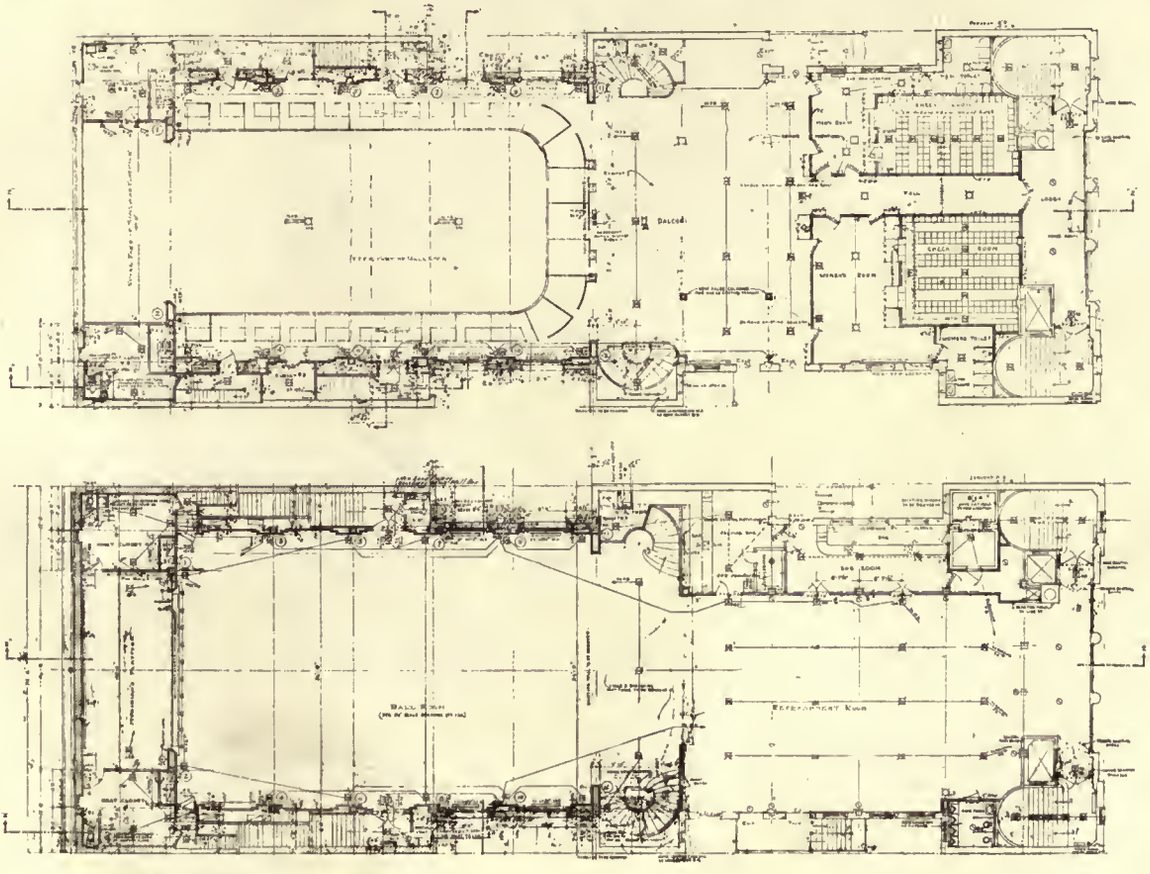
MUSICAL MUTUAL PROTECTIVE UNION BUILDING, EAST 85TH AND EAST 86TH STREETS, NEW YORK.

THE BALLROOM.

Trowbridge & Livingston, Architects.

MUSICAL MUTUAL PROTECTIVE UNION BUILDING, EAST 85TH AND EAST 86TH STREETS, NEW YORK.

CLUB-ROOM.



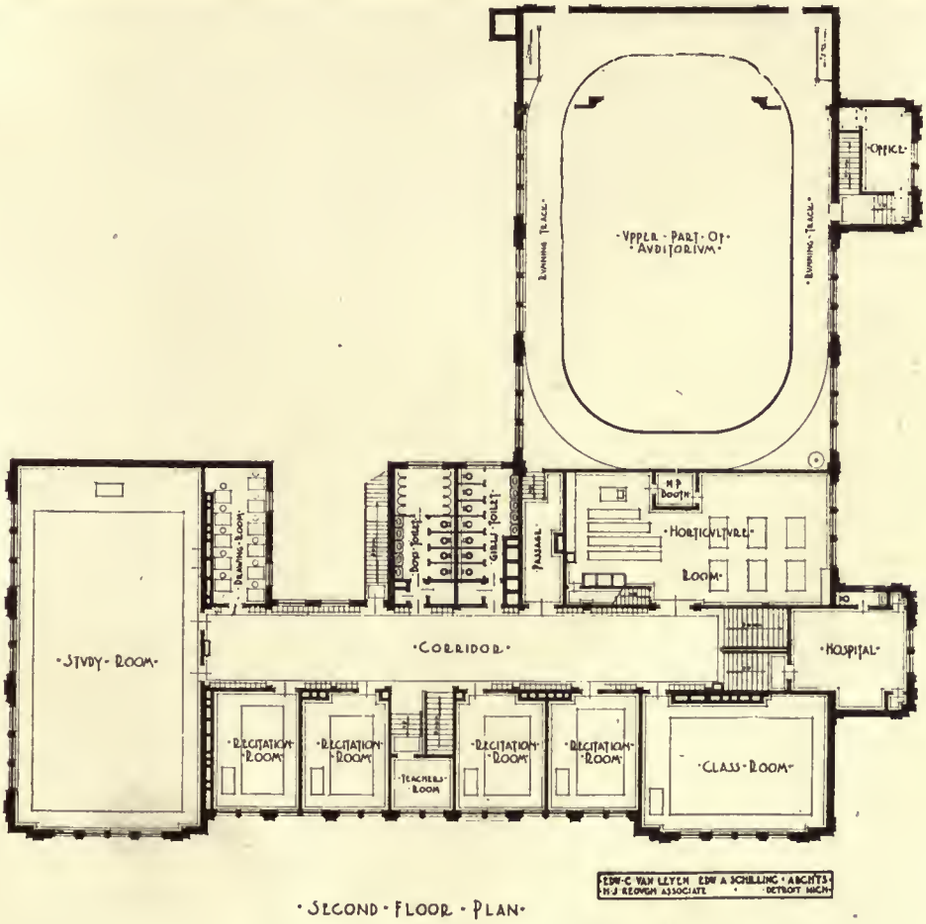
PLANS OF BALLROOM FLOORS. Trowbridge & Livingston, Architects.

MUSICAL MUTUAL PROTECTIVE UNION BUILDING, EAST 85TH AND EAST 86TH STREETS, NEW YORK.

BALDWIN HIGH SCHOOL, BIRMINGHAM, MICH.

Van Leyen & Schilling, Architects; H. J. Keough, Associate.

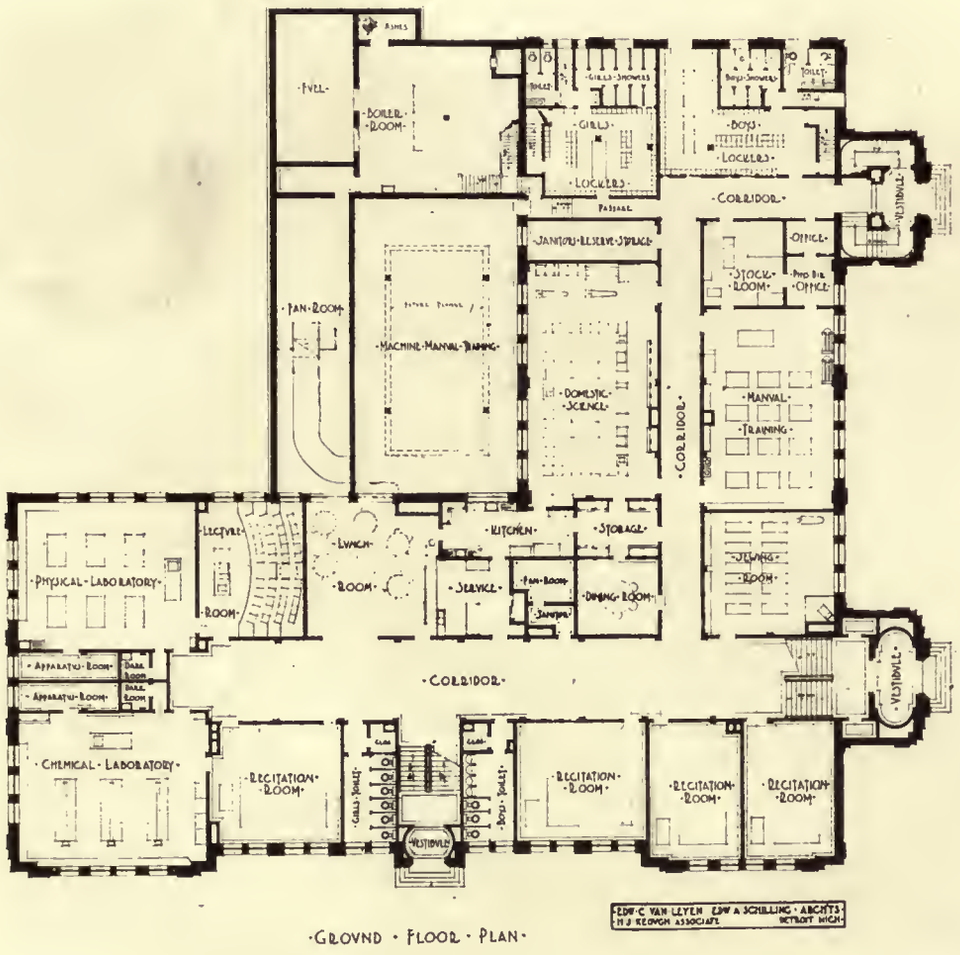
GYMNASIUM.



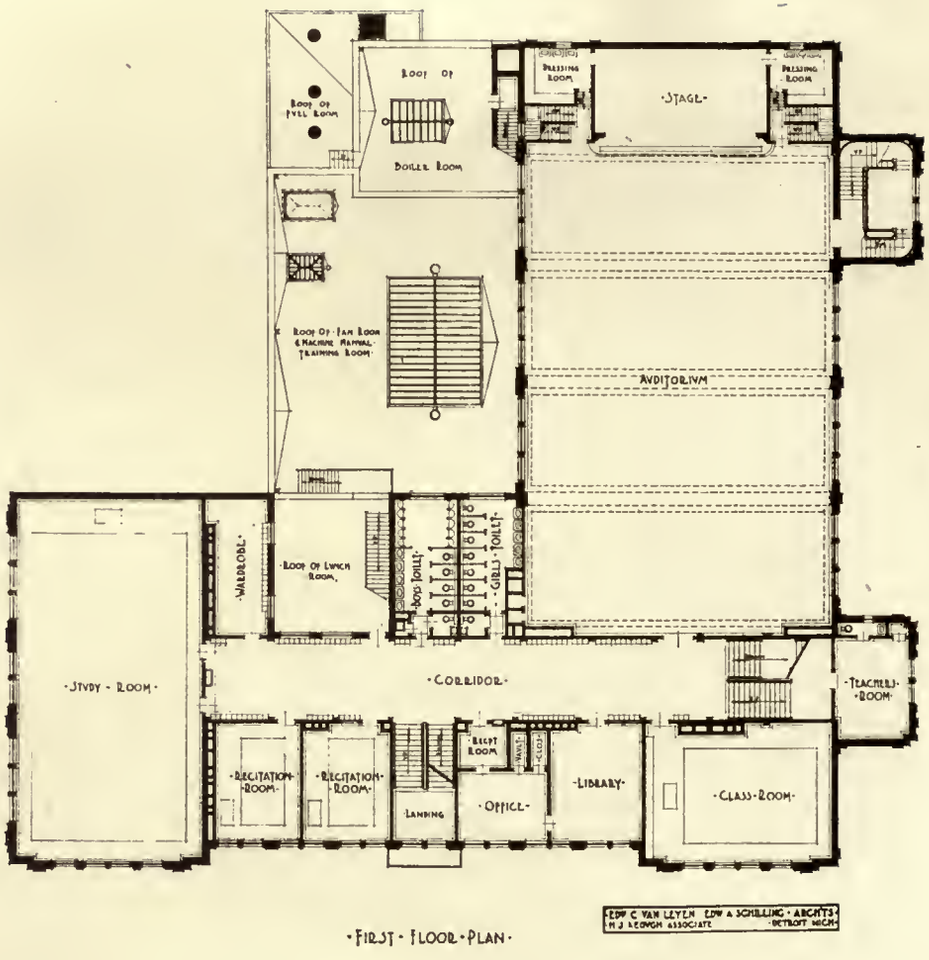
SECOND FLOOR PLAN.

Van Leyen & Schilling, Architects; H. J. Keough, Associate.

BALDWIN HIGH SCHOOL, BIRMINGHAM, MICH.



GROUND FLOOR PLAN



FIRST FLOOR PLAN

BALDWIN HIGH SCHOOL, BIRMINGHAM, MICH.

Van Leyen & Schilling, Architects, H. J. Keough, Associate.

The Building Situation of To-Day

By Richard P. Wallis

THE purpose of this article is to attempt to reconcile the prospective builder with the economic conditions that now confront him. In common with other industries there has always been the ever-present increment in cost. Before the war it was called the High Cost of Living, and people wondered what was the cause of it. The late war enormously enlarged this increment, but people understood what was the cause of it and accepted it, some, unfortunately, even to take advantage of it. One of the direct and most important heritages of the war is the comparative higher cost of commodities and labor than even during the period just preceding the World War. A good many people are looking forward to the ultimate readjustment of prices, now that peace is imminent, and a return to what might be called the pre-war basis. These people overlook the fact that a permanent change has taken place and that the basis for computing conditions in the future must be from the level now existent and not from any basis established at any time in the past.

The causes for this change of condition are more or less apparent and numerous. The fact that foreign governments have waged a large part of the war on finance borrowed from the United States, that for a good many years at least most of Europe must come to this market to make its purchases, as indeed they are now doing, means that there is an abnormally large amount of gold in circulation in this country. The necessary corollary of this condition is that the gold dollar, standard of value but not value itself, loses part of its purchasing power. This is an established economic theorem. There has been abnormal demand for many commodities and curtailed production in all but the essential production for the prosecution of the war. These conditions have resulted in a higher cost for the necessities of life as well as luxuries.

The building business entered the period of our participation in the war in a none too healthy condition. The fact that the war, beginning in 1914, had more or less upset the financial basis of the country, coupled with certain domestic uncertainties, created a condition that was not at all favorable to the successful continuance of the building trades. On the entry of this country into the war, April, 1917, the vast army of private builders was drafted for the construction of munition plants, cantonments, hospitals, housing schemes, and all that varied building necessary for the rapid welding together of an army organization. This left private building as a secondary consideration, and in fact it was not long before private building ventures were prohibited by government edict. All of these facts have combined to create a serious shortage both in residential quarters and in industrial construction.

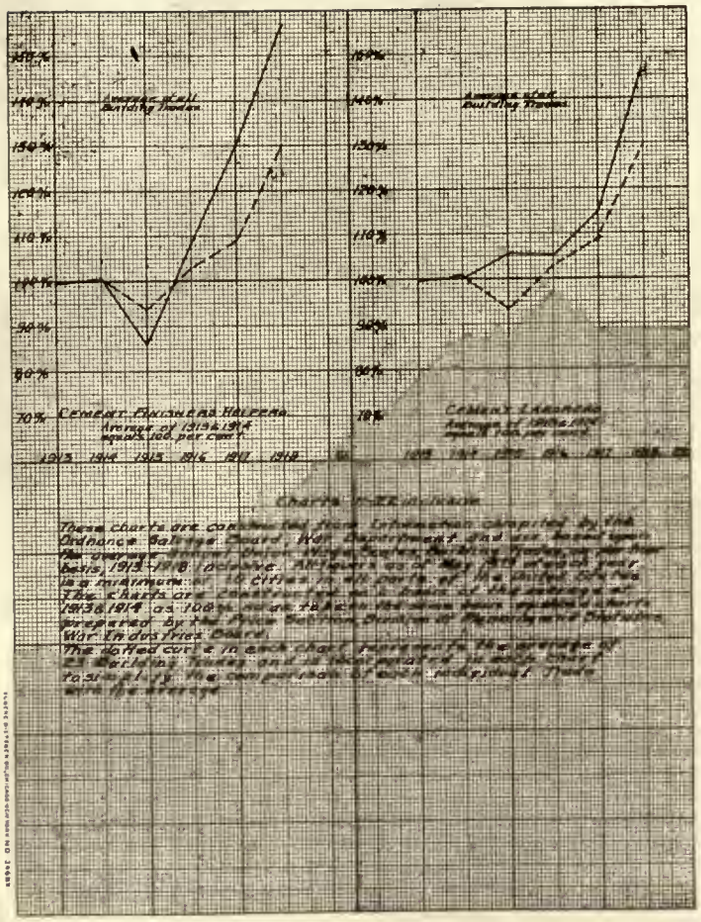
A study of Chart No. 24, "Civilian Building in 120 Cities in the United States," indicates the almost straight decline beginning in 1916 and reaching in 1918 the low ratio of one-half of the years 1913–1914. Under normal conditions this curve would fluctuate above and below whatever value might be chosen as to represent 100 per cent, and thus the shortage of the years below the line would be taken care of by the surplus above the line. But starting from the present low point, and considering the hesitancy of those whose business it is to provide floor space and living accommodations, the situation is bound to be bad for some time to come even if building operations are resumed in the immediate future. How much worse it will be if this period of stagnation and indecision continues, is easy but not pleasant to contemplate.

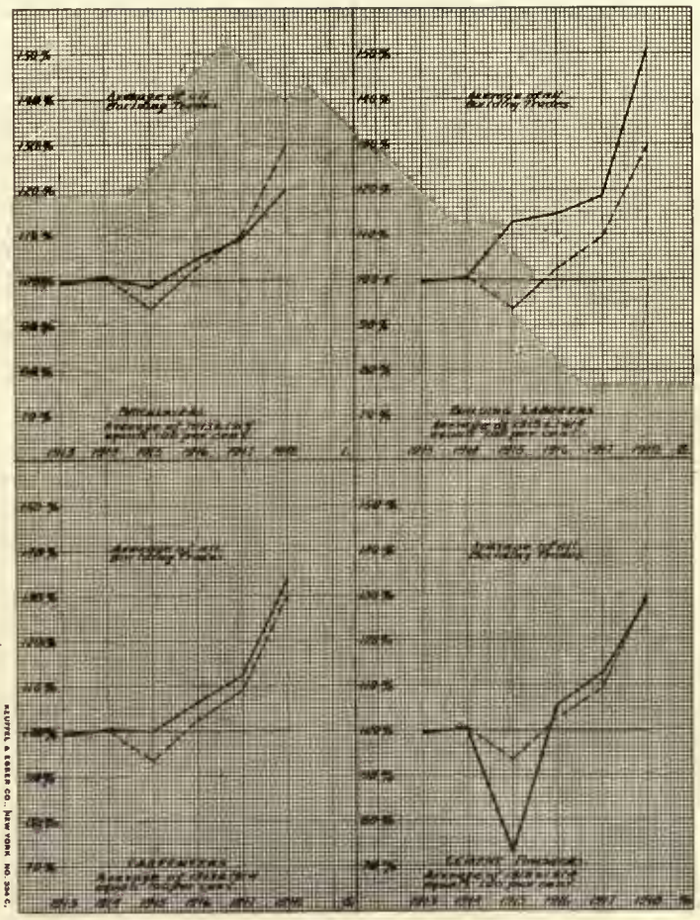
The present shortage of buildings of the residence class is felt more keenly than that of industrial buildings, as many of the plants erected for the production of munitions may serve other, peaceful purposes; but it is serious enough even in this class of building. The war has left America the opportunity of tremendously increasing its foreign trade. The Central Powers are eliminated from world trade for years to come and the rest of Europe is at the present engaged in binding up its wounds and making ready to begin to provide for its own bare necessities. The United States, on the other hand, has been left comparatively unscathed and is in an excellent position to take advantage of this unusual situation.

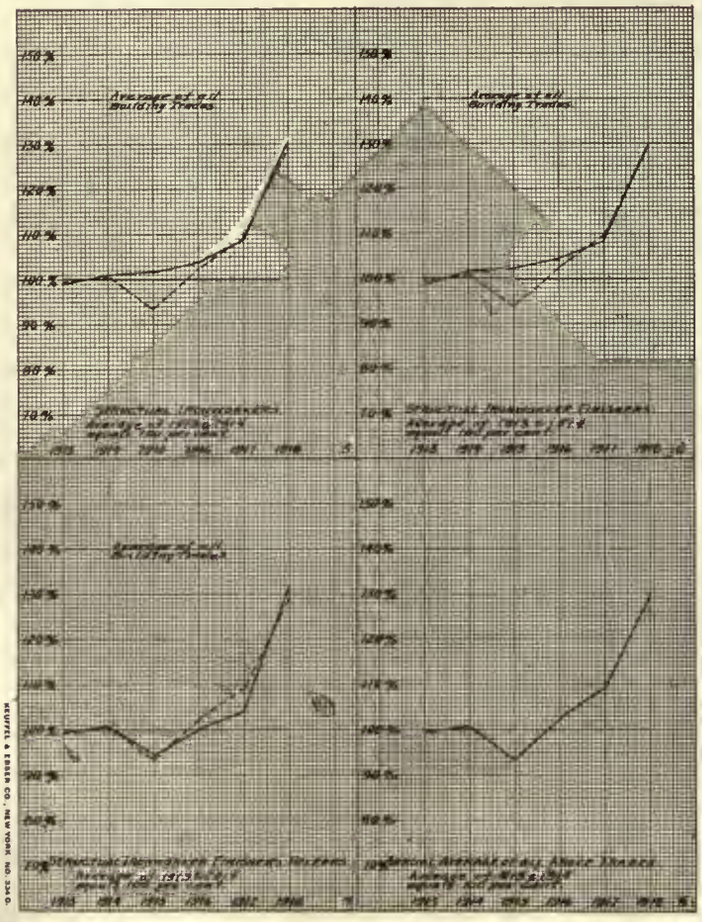
The far-seeing manufacturer has accepted the conditions, higher wages, and higher raw-commodity costs, and is prepared to meet these conditions by increasing his output, but at a smaller unit profit. In order to successfully consummate this end, he, the manufacturer, must increase the floor space of his factories and provide more suitable living accommodations for his employees. This means that before the manufacturer can attain this end, and before a surplus of manufactured commodities can be produced for export, he must have more buildings. Why, then, has not the building business prospered since the signing of the armistice? There are two principal reasons for this: The first is the uncertainty in the mind of the public as to the continuance of building-material prices at their present high figure, and the other is the misconceived idea of the exaggerated wage paid to labor. A comparison of Building Material Costs and Labor Wages may be obtained from Chart No. 25.

The first of these two reasons has been recognized, and considerable propaganda has been launched in hopes of stabilizing these prices for a fixed period of time so that a prospective builder may build now, free from the uncertainty that material prices may drop after he has made his expenditure, and thus give the advantage to the man who is more cautious and waits. If this condition of uncertainty were to prevail it would penalize the spirit of initiative and mortgage the industrial future of the country. A failure in the building programme leads to a series of well-nigh fatal consequences. Without factory floor space, production is limited, unemployment and all its attendant evils appear; without proper housing accommodations the moral fibre of the community suffers, and if this paralysis were to continue for any appreciable length of time, untold and unthought-of evils would arise.

The building-supply people recognize this possibility and are taking steps to remedy it. All parties interested in the rehabilitation of the building business should try to get together and attempt to fix the price of building material at the present rate for a definite length of time. This would instil confidence in the mind of the prospective builder and thus remove the first of the two principal impediments to the success of the building business.







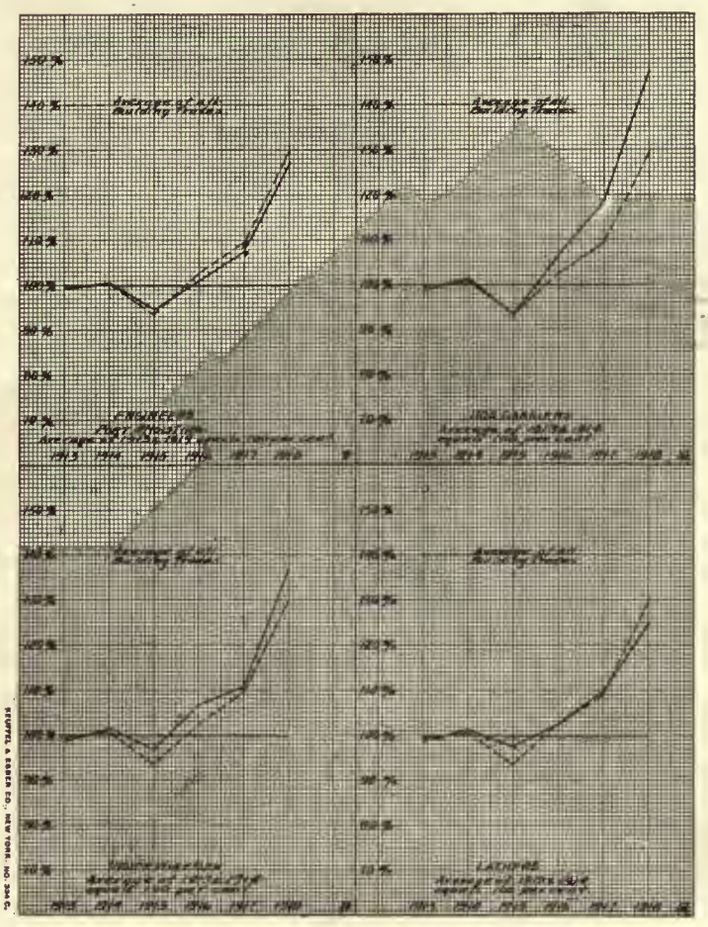


Chart No. 23 illustrates the comparison of building-material costs with those of other commodities, while subject to the same sharp rise in the period from 1916 on, it has remained lower in proportion than any of the other commodities platted. The curve representing building-trades wages is appended to show the disproportion between what labor is receiving and what it is paying for the necessities of life. This shows that labor is much worse off to-day, even with its higher wages, than it was during the period just preceding our entry into the war. Of course during the period of the emergency the income of labor was augmented by overtime and bonuses, but that has stopped, so we may now consider the relationship on the basis of straight wages and actual costs.

The second and the less-understood impediment is the popular conception of exorbitant wages paid to labor. There is no doubt that the rate of wages has sharply advanced in the last few years. But so have wages in other lines of endeavor. The question is, Is building labor disproportionately high? It is not. A study of the accompanying charts, numbers 1–22 inclusive, prepared from data obtained by the Salvage Board of the Ordnance Department, U. S. A., under the direction of Captain R. W. Yardley and Mr. L. F. Summerall, shows that the average of building labor as a whole is only 30 per cent higher than it was during the years 1913–1914. This should be an encouraging discovery. Wages in other industries have doubled and trebled in the last few years, but building labor has increased only one-third of itself. The question will be asked, Is this permanent? The answer is, Yes. No one should be asked to give his services for less than they are worth, and, comparing income and general living conditions, building labor is little, if any better off than in pre-war days. (See Chart No. 23.) If there is any prospect of wage readjustment in the immediate future it will be upward rather than downward. Organized labor is a very powerful force and will never consent to go back to the old basis in the face of present conditions. Mr. Gompers himself has set this forth.

The building industry is huge, surpassed only in number of men employed in its various ramifications by the industry of agriculture. Twenty-five per cent of the total tonnage moved by the railroads is building material. Building directly affects all of us, either as a business proposition or as a domestic problem. If this present state of suspended animation continues we will all suffer because of it. The need to avert this condition and to insure over 4,000,000 people the opportunity to earn their livelihood, to insure the permanency of our newly acquired trade opportunities, and to insure every one of us the opportunity of a decent place to live in, is to educate the prospective builder. He must be shown that he is not at a disadvantage in building now, but that, on the contrary, he will probably never be able again to build for what he can build now. As soon as he realizes this fact and acts, the knot will be cut. We shall have new buildings, we shall insure the employment of the men now slowly returning from the other side, and every one of us will benefit from the confidence in the future that will be assured.

A good many of us are thinking of economic conditions that existed after the Civil War, and are trying to fit the present period to that in the attempt to predict an ultimate reduction of prices to a level somewhere near that which existed before. We lose sight of the fact that the Civil War, important as it was to us, was a local incident in the eyes of the world, whereas the present war has been a world-wide affair that has completely revised the financial basis of the world. It is obvious that a comparison between the two periods is unfair, and that we must accept the new state of affairs as permanent and proceed accordingly. Think it over.

Announcements

A new architectural firm, with offices at 30 East 42d Street, has been formed in New York, with the following members as partners: Edgar I. Williams, registered architect, B. Sc. and M. Sc. in architecture, Massachusetts Institute of Technology, winner of the Rome Scholarship and Fellow of the American Academy in Rome, Italy; Walter R. Mahnken, registered architect, a graduate in architecture of Pratt Institute and of the University of Pennsylvania (both having practised in offices of prominent architects in New York, Pittsburgh, and Boston, and executed their own work); and Alfred J. Mahnken, B. Sc. and C.E., Rutgers College, with ten years' experience as an architectural, civil, and structural engineer, and in general engineering and building construction. All have recently been in active service as commissioned officers with the United States Army.

We are advised by Elmer Grey that the Julian Eltinge house, published in our March number, should have been attributed to both Pierpont Davis and his brother, Walter S. Davis.

Frank J. Forster announces that he has resumed the practice of architecture. Offices: 1730–31 Aeolian Hall and 33 West 42d Street, New York.

Norman Hatton, Wm. J. Klein, and S. E. Holmes announce the formation of a partnership under the name of Hatton, Klein & Holmes. Their practice will be devoted to general engineering, architecture, machinery layouts, heating and ventilating and industrial engineering. Their offices are in the Masonic Temple, New York.

Book Reviews

Art Principles with Special Reference to Painting. By Ernest Govett. With a Photogravure Frontispiece and 30 Illustrations. G. P. Putnam's Sons.

The definitions of art are as various as the forms in which it is made manifest and what is beautiful or the contrary has been since the beginning of art a question that must be settled largely by the individual point of view. The discussion is an unending, and always an interesting one, and when it is approached with a sincere purpose to show cause based on thoughtfully digested principles we may find profit and added appreciation of art in general. Mr. Govett has included in his discussion, under the head of Fine Arts, Poetry, Sculpture, Painting, as well as Poetry and Fiction. Of the architect he says:

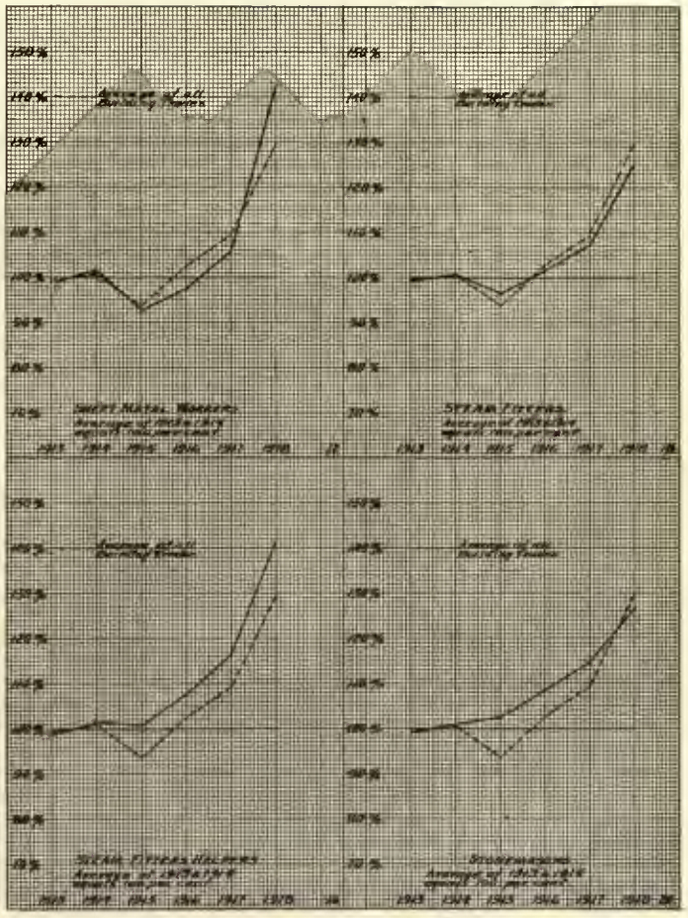
"The architect is under the necessity of meeting the ends of utility, but subject to this restriction it is obvious that simplicity must be the keynote to his design, for the highest quality of beauty in his power to produce is grandeur, and this diminishes with an increase in the complexity of his sign combinations. The combination of simplicity with grandeur is the first form of beauty that would be recognized by the immature eye, and consequently in respect of the general test of art excellence, architecture falls into line with the Associated Arts, and not with music."

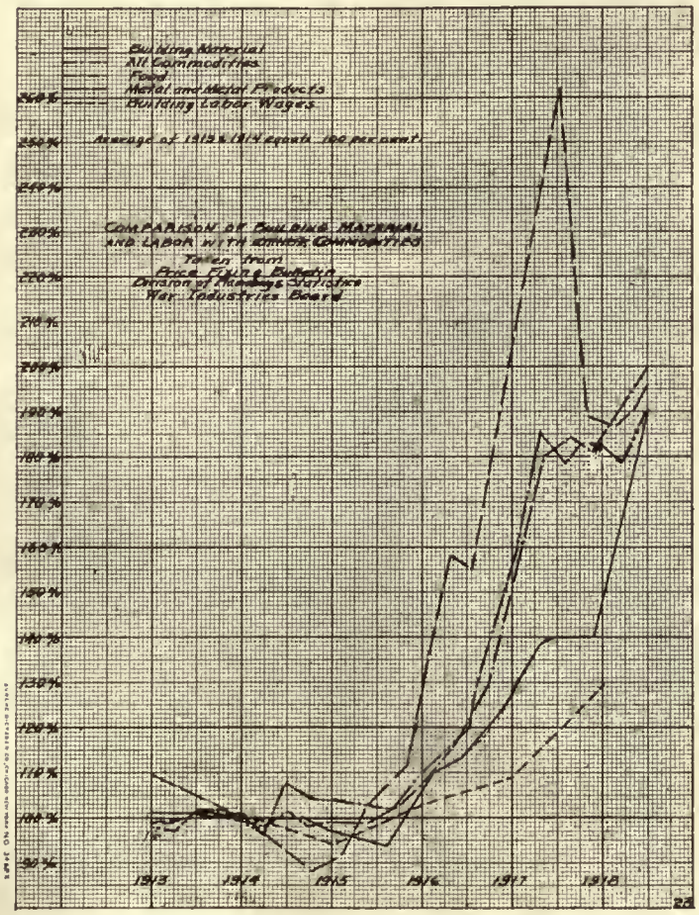
It is a pleasure to find a book about the arts so free from affectations. The style is admirably direct and the analyses of many famous pictures clear and comprehensive.

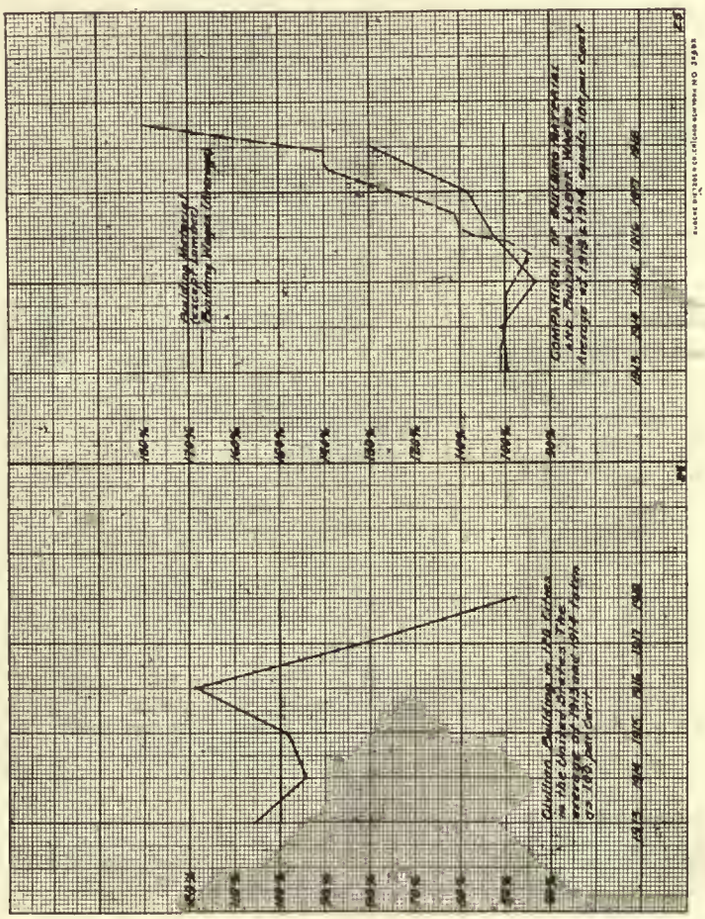
Ethics of Contracting and Stabilizing of Profits. By F. W. Lord. 16mo.

Here is a proposed League of Nations for the Building Trade, founded upon idealistic principles with a definite plan for carrying them out. It would do away with cut-throat methods of business. "It shows that it is for the best interests of all persons concerned in a building operation to cooperate and to treat each other openly and fairly, rather than to try to get ahead of one another by any of the thousand and one ways which are so common." We commend the reading of this little book to all concerned.

Average of all Building Trades
PAINTERS
PLASTERERS
PLASTERERS LABORERS
PLUMBERS & GAS FITTERS


SHEET METAL WORKERS
STEAM FITTERS
STEAM FITTERS HELPERS
STONEMASONS

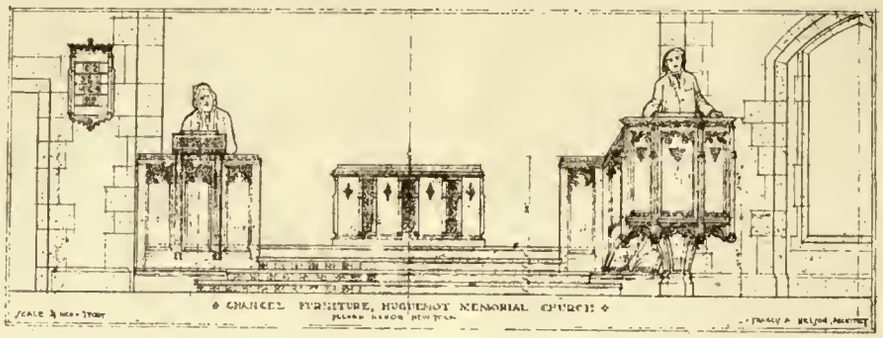

Building Material
All Commodities
Food
Metal and Metal Products
Building Labor Wages
Average of 1913 & 1914 equals 100 per cent
COMPARISON OF BUILDING MATERIAL AND LABOR WITH OTHER COMMODITIES
Taken from
Price Fixing Bulletin
Division of Planning & Statistics
War Industries Board
1913
1914
1915
1916
1917
1918



The Huguenot Memorial Church, Pelham Manor, N. Y.

Francis A. Nelson, Architect

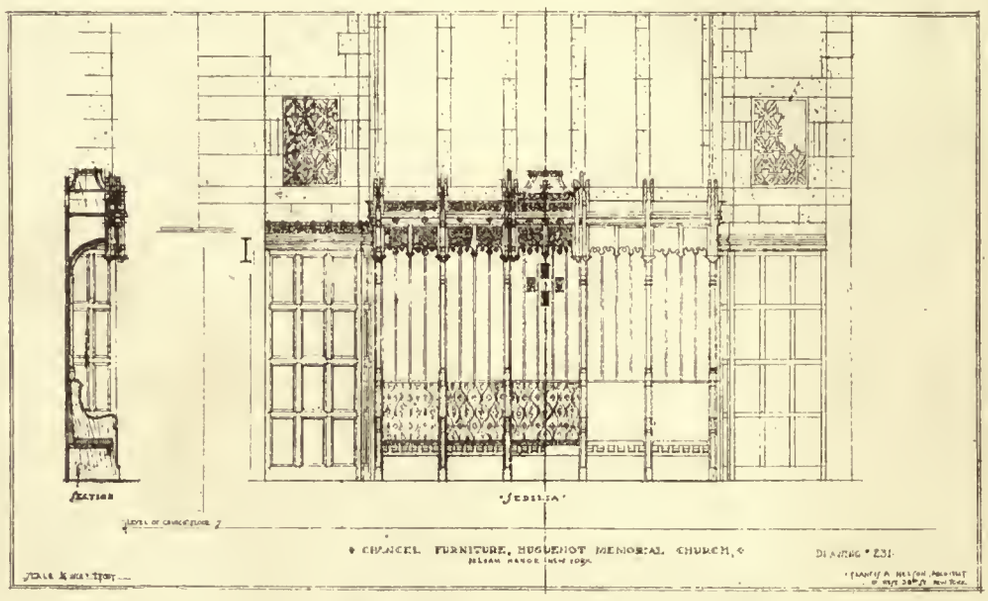
THE Huguenot Memorial Church at Pelham Manor, N. Y., is essentially a surburban church. Designed with this end in view, the dominant idea is its simplicity in arrangement, construction, and appearance. Located as it is on a busy thoroughfare, the Boston Post Road, at the corner of Pelhamdale Avenue, it presents a pleasing picture of quiet simplicity and churchly charm to the many wayfarers who pass its doors. The building is L shaped in plan, one wing forming the church and the other the building for the Sunday-school and other activities. The belfry tower joins the two buildings and serves as an entrance to the church, Sunday-school, and the pastor's study on the ground floor, and contains the organ-loft above. At the back of the church is the vestibule, separated from it by a carved and glazed screen. Three entrances open off from this. Other ample entrances are provided for the Sunday-school, the assembly-room in the basement, the kitchen, and boiler-room service.



While the building follows in general character the lesser parish churches of England, it is unlike the large majority of these in that it has no clearstory or inside piers, an arrangement which enables every sitter to have an unobstructed view of the pulpit. This plan is much more acceptable in America than the English type.

The main walls of the church and tower are constructed of local stone, of varying colors, laid in white-mortar joints, decorative in effect. The trim is of cast stone approaching limestone in color. The roof is of variegated and graduated slate, with copper flashings, gutters, and leaders. The interior is roughly plastered and has stone trim around the door and window openings. The roofs of church and Sunday-school are supported by exposed trusses which rely for their decorative effect on the structural members themselves. The actual rafters are exposed and the slate is laid directly on the dressed sheathing. This roof work is all of yellow pine stained a deep warm brown, which contrasts agreeably with the gray stonework of the walls and window trim. Oak is used for trim in the church, whereas in the Sunday-school it is of yellow pine. Movable partitions in the Sunday-school provide separate classrooms during the lesson hour. The wainscoted chancel of the church contains handsomely carved pulpit, lectern, sedilia and organ cases, a memorial gift.

Above the chancel is a beautiful fifteenth-century window designed and executed by Clement Heaton. Not only in point of architectural period, but also in the actual manual processes incident to the transfer of the design to the glass and in the firing, cutting, and leading of the many component parts, Mr. Heaton has obtained a result which harmonizes admirably with the English Gothic setting. Mr. Leon V. Solon has pronounced this work "the best and purest piece of English Gothic in the country."



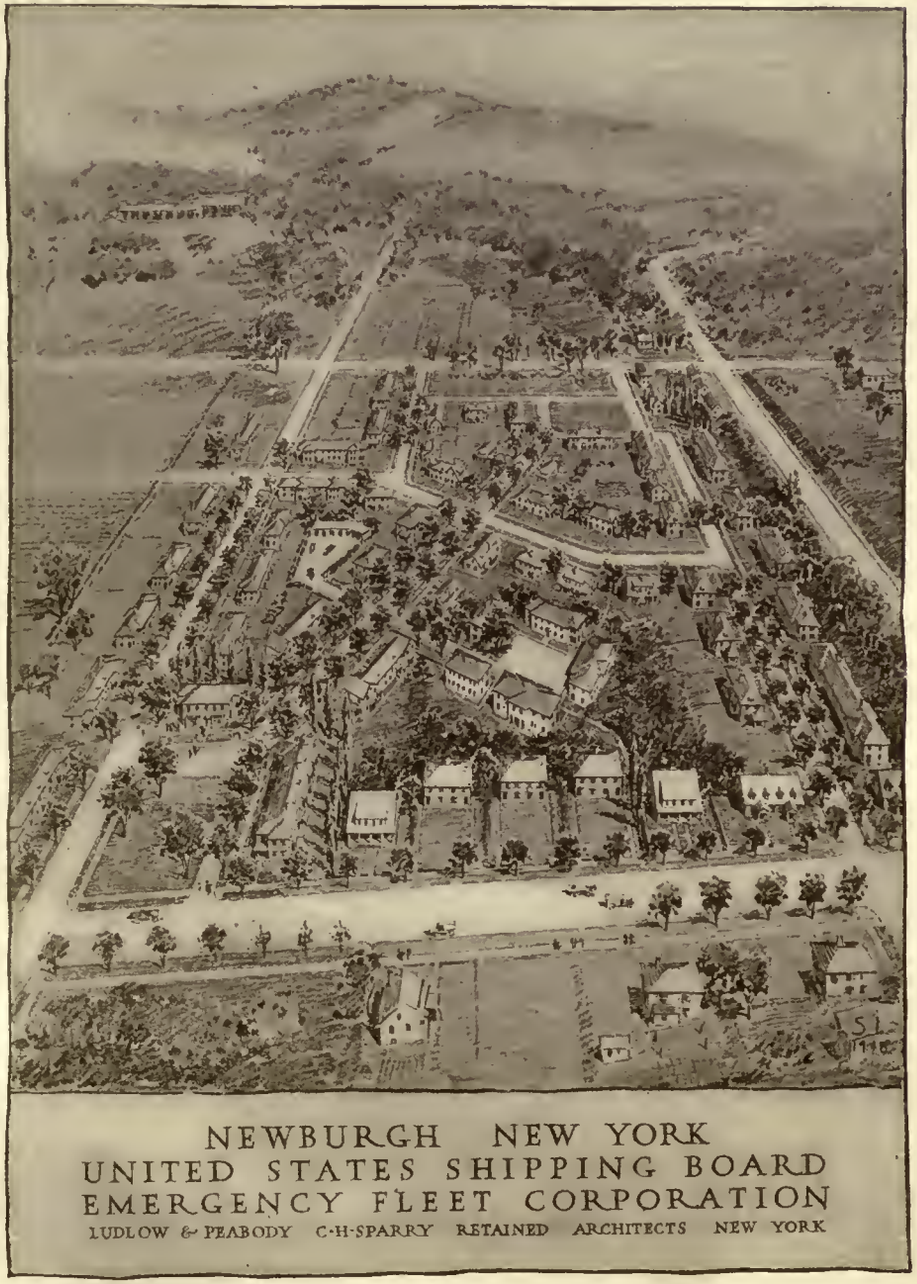
The building also contains primary and infant classrooms, women's room pleasantly situated, a pastor's study, men's Bible classroom, an assembly-room, and, adjoining it, a commodious kitchen with large serving pantry, so that church dinners and other social functions may be handled with great facility.

PULPIT.

Francis A. Nelson, Architect.

DETAIL OF TOWER.

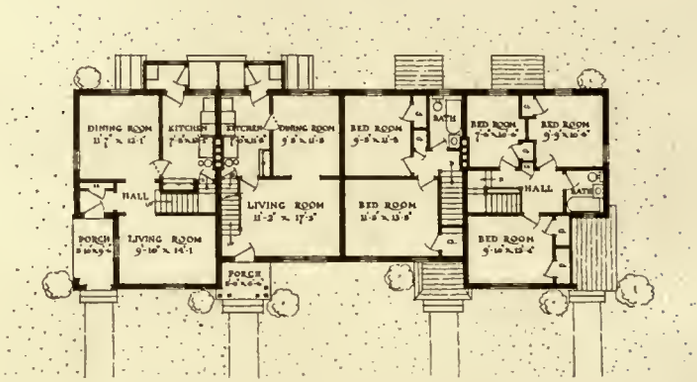
THE HUGUENOT MEMORIAL CHURCH, PELHAM MANOR, N. Y.



NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION
LUDLOW & PEABODY C-H-SPARRY RETAINED ARCHITECTS NEW YORK

FOUR-FAMILY HOUSE

Scale 0 5 10 15 20 25 30 Feet

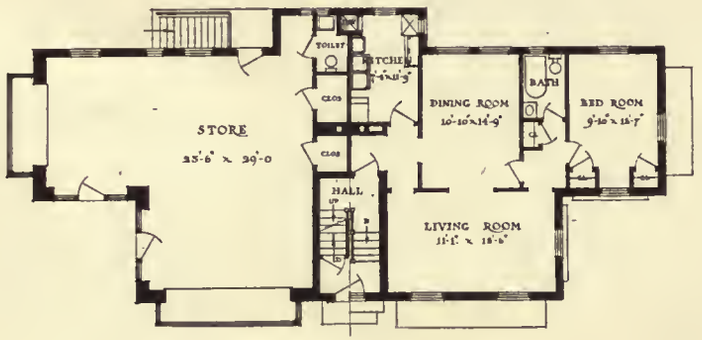


FIRST FLOOR PLAN SECOND FLOOR PLAN

NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION
LUDLOW & PEABODY C-H-SPARRY RETAINED ARCHITECTS NEW YORK

STORES AND APARTMENT HOUSE

Scale 0 5 10 15 20 25 *Feet*



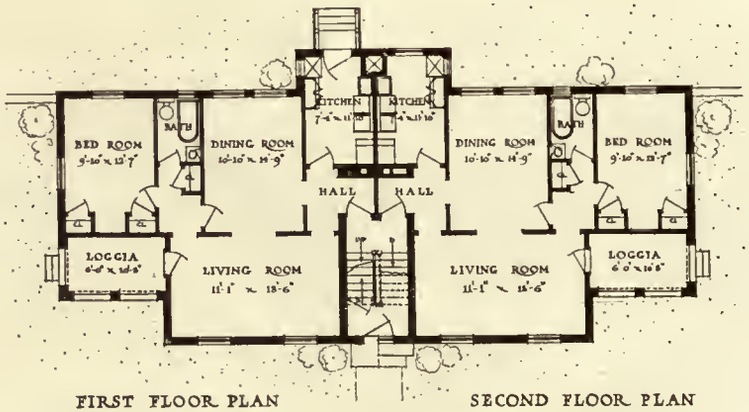
FIRST FLOOR PLAN SECOND FLOOR PLAN

NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION

LUDLOW & PEABODY C-H-SPARRY RETAINED ARCHITECTS NEW YORK

APARTMENT GROUP

Scale 0 5 10 15 20 *Feet*



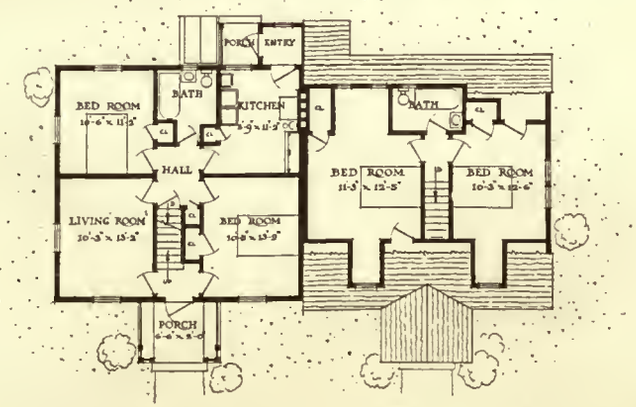
FIRST FLOOR PLAN SECOND FLOOR PLAN

NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION

LUDLOW & PEABODY C-H-SPARRY RETAINED ARCHITECTS NEW YORK

SEMI ~ DETACHED HOUSE

Scale 0 5 10 15 20 Feet



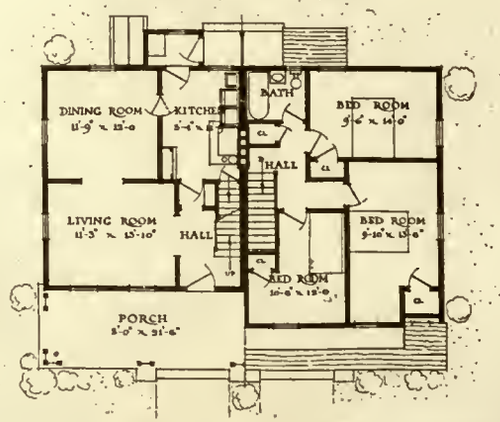
FIRST FLOOR PLAN SECOND FLOOR PLAN

NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION

LUDLOW & PEABODY C·H·SPARRY RETAINED ARCHITECTS NEW YORK

SEMI ~ DETACHED HOUSE

Scale 0 5 10 15 20 Feet



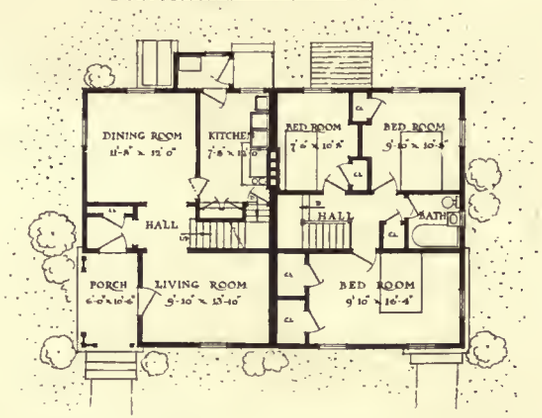
FIRST FLOOR PLAN SECOND FLOOR PLAN

NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION

LUDLOW & PEABODY C·H·SPARRY RETAINED ARCHITECTS NEW YORK

SEMI ~ DETACHED HOUSE

Scale 0 5 10 15 20 Feet

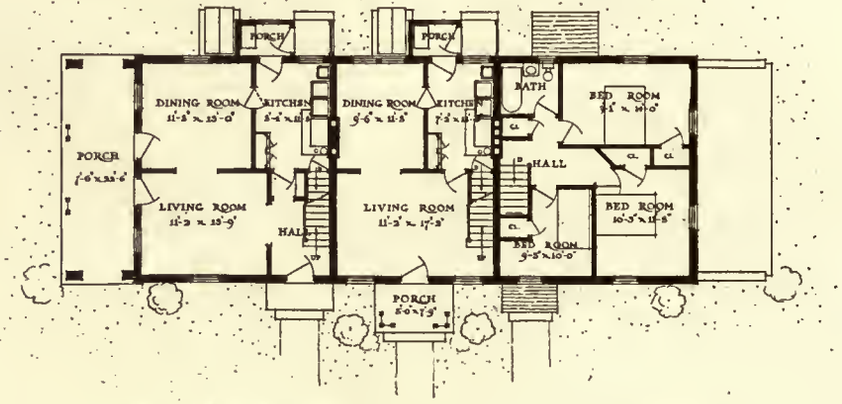


FIRST FLOOR PLAN SECOND FLOOR PLAN

NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION
LUDLOW & PEABODY C·H·SPARRY RETAINED ARCHITECTS NEW YORK

THREE ~ FAMILY HOUSE

Scale 0 5 10 15 20 25 Feet



FIRST FLOOR PLAN SECOND FLOOR PLAN

NEWBURGH NEW YORK
UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION
LUDLOW & PEABODY C·H·SPARRY RETAINED ARCHITECTS NEW YORK

Door-Knockers—Something About Their Origin and Development

THE origin of door-knockers is almost lost in obscurity, and their development from mere articles of utility to objects of art has been a long, slow process of evolution, covering centuries and antedating Western civilization by many hundreds of years.

The first general use of knockers that is positively known was among the ancient Greeks, who probably adopted them from the Egyptians. We are told that the Greeks considered it a breach of good manners to enter a house without warning the inmates, and that the Spartans gave this notice by shouting their arrival, while the Athenians announced themselves by using the knocker. Its introduction doubtless came at the time when doors superseded hangings, for the purpose of insuring greater safety or privacy.

In the Greek houses of the better class a porter was in constant attendance at the door to admit visitors. Slaves were usually employed in this capacity, and were chained to the door-posts to prevent their wandering and shirking the monotony of the task. They often went to sleep while on duty, and in order to awaken them a short bar of iron was fastened to the door by a chain to be used as a rapper by those desiring entrance to the house.

It is said that this strictly utilitarian rapper, as it was first called, was often wrenched from the door to be used as a weapon of offense by visitors who were not friendly disposed toward the householder. A later development was a direct consequence of this misuse, the next type being in the form of a heavy ring fastened by a strong clamp or plate to the door, thus serving the double purpose of knocker and handle.

From Greece the custom was transmitted to the Romans, and with the Western trend of early civilization to nearly every country of Europe. The introduction of knockers to England, where together with Italy and Germany they have attained the greatest artistic development, was no doubt due to the Roman conquest of western Europe and Britain.

Knockers have been in constant use, from the earliest times except for short periods in the seventeenth and nineteenth centuries, and were most freely used and elaborated during the Romanesque, Gothic, and Renaissance periods. The material first employed in their construction was iron, later bronze, and lastly brass, which has retained preference since it first came into use.

By slow degrees in the early Middle Ages the plain, heavy rings yielded to the influence of art in being bevelled and chased. The plate or support for the ring next began to assume various shapes, and in the age of blacksmithing developed very fine examples of craftsmanship before the handle emerged very far from the primitive ring formation.

Next the ring-shaped handle gave way to a slender bar terminating in a hammer.

Up to and during the fifteenth century the greatest embellishment was lavished upon the back plate and not on the knocker itself. Then the Renaissance swept Europe, and the Italian metal-workers first saw the sculptural possibilities in the treatment of the hammer. A female figure or dolphin marked the beginnings, and Giovanni of Bologna was responsible in great part for development in the way of size and variety of treatment.

French, Italian, and German sculptors elaborated the designs, even to the extent of using four or five figures, until all simplicity and suggestion of utility disappeared and the knocker became merely a pendent statuette. In the eighteenth century there was a general reversion to simplicity, and utility again became the foremost consideration.

Knockers seem to have been favored in England more than in any other country, and may be found in great numbers even in the most remote and out-of-the-way places. The great variety of design and sculptural treatment is due to the fact that they had their inception at a time when design as a profession was unknown, and knockers were made by iron-workers under the supervision of master smiths, many of them being of odd design to fit doors of unusual shape.

The oldest knockers in England are the sanctuary knockers on the doors of several of the cathedrals, the one at Durham being one of the finest examples of the early bronze type. Some of these were merely grotesques, while others bore a symbolic significance. The Durham knocker dates from the eleventh century and enjoys a most interesting history. As early as the year 740, in the episcopate of Cynewulf, criminals and offenders of all kinds were allowed sanctuary at Durham cathedral and the church precincts. If in seeking to escape from his pursuers the criminal was able to reach the church-door and strike the knocker, he was given "sanctuary"; that is he was taken in, housed, fed, and kept safe from capture for thirty-seven days, after which he was either pardoned or taken to a place of safety far from the scene of his crime.

There was sanctuary also at the minories, at Whitefriars and at the old Mint in Southwark, the right being still retained for the precincts of Westminster Abbey long after the dissolution of the monasteries in 1540.

During the fifteenth and sixteenth centuries knockers were used on all classes of houses, and for the most part showed very intricate pattern and delicacy of design.

The instances of individual knockers are very numerous and their stories of great interest. One owned by Isaac Walton, author of "The Complete Angler," is described by a contemporaneous writer as a "lobworm of buxom proportions dangling from a hook," and was hammered out by an admiring smith whose shop stood between Walton's home and his favorite fishing-stream.

Knockers upon the houses of Doctor Johnson and Carlyle are of interest chiefly because of their association with men of letters in that period. At the time when extreme elaboration was in vogue, many artists of note designed knockers of more simple and dignified type for their own use, those by Dante Gabriel Rossetti and Sir Lawrence Alma-Tadema being among the finest examples.

Charles Dickens was considered an authority on this subject and made mention of knockers many times in the course of his writings. The one that he used upon his own door is particularly noteworthy because of its intimate description in the opening lines of the "Christmas Carol," in which old Scrooge, coming home late at night, imagines that he sees Marley's face gazing at him out of the darkness.

Shakespeare, too, mentions knockers frequently, and not many years ago a very rude and ponderous iron knocker was exhumed in Morayshire, Scotland, which it is claimed is the very one that wakened Macbeth in his castle.

Like instances are numberless in Great Britain, and many antiquarians as well as museums, such as the one at South Kensington, have made large and valuable collections of the massive knockers that were used in centuries past.

One of the chief factors in the subsequent reduction in size was the pre-Victorian pastime indulged in by nocturnal prowlers of stealing large and valuable brass knockers to sell for the few pennies they might bring as old metal.

Types of knockers finding the greatest favor in England in the seventeenth and eighteenth centuries were the Garland type, the Georgian urn, Diana's head, Hammer types, some showing traces of Byzantine or Saracenic origin, and, greatly in demand, the Lion's Head, which retained its prominence in the American colonies until the revolution, when England was taboo and the Eagle took precedence over the Lion, and has remained a prominent form ever since, due to its national significance.

At this time many characteristic colonial knockers appeared, some of which may be traced to old English or other influence, while a great number were of origin in the colonies themselves and were more often than not very simple, dignified, and beautiful. New England towns especially abound in them, and they are well worthy of note.

For a short time in the century just past door-knockers, along with everything else that was old—no matter how beautiful—were relegated to the waste-heap, and everything new, however ugly, came into prominence. In recent years, however, they have come into their own again in greater force than ever before, and it is doubtful if ever again these charming and useful little objects with a history and art rooted in the antiquity of ages will be allowed to disappear from our doors.

The Administration Building of the Fisk Rubber Company

This building houses a variety of activities that would hardly be equalled in the most cosmopolitan of a great city's greatest skyscraper.

It had to be constructed to fit, not merely to hold, a printing department more perfectly equipped than many an independent printing plant; the purchasing department, which had to be so located as to be of easy access to a constant stream of callers; an engineering department; a traffic department, where everything from train-load freight shipments to the securing of Pullman tickets is handled; a credit department; a department of service; sales and advertising departments, which have been so largely responsible for the success of this company; the Fisk Social and Athletic Association; an export department, and so on through specially designed offices for officials and a score of other activities concerning which there is not space to mention.

Annual Meeting of the Joseph Dixon Crucible Company, 1919

The stockholders of the Joseph Dixon Crucible Company held their annual and regular meeting in April. The following directors and officers were elected:

Directors—George T. Smith, William G. Bumsted, J. H. Schermerhorn, George E. Long, Edward L. Young, Harry Dailey, Robt. E. Jennings.

Officers—George T. Smith, President; George E. Long, Vice-President; J. H. Schermerhorn, Vice-President; Harry Dailey, Secretary; William Koester, Treasurer; Albert Norris, Assistant-Secretary and Assistant-Treasurer.

The American Graphite Company, incorporated under the laws of the State of New York, is a subsidiary of the Joseph Dixon Crucible Company, and its annual election was held on the same day as that of the Joseph Dixon Crucible Company, and resulted in the election of the following officers: George T. Smith, President; George E. Long, Vice-President; J. H. Schermerhorn, Treasurer; Harry Dailey, Secretary; William Koester, Assistant-Secretary and Assistant-Treasurer.

"Physical Properties of Dense Concrete as Determined by the Relative Quantity of Cement," by Professors Giesecee and Finch

This bulletin shows how the compressive, tensile, and transverse strengths and other physical properties of dense concrete vary with the per cent of cement used in the preparation of the concrete, and thereby enables the designer and the builder of concrete structures to effect the greatest possible economy in the use of concrete by requiring the fine and coarse aggregate for the concrete to be mixed in such proportions as will secure a dense mixture, and adding only such a per cent of cement as is necessary to produce the strength or other physical properties desired in the concrete.

The bulletin is for free distribution on application to Publications Committee, University of Texas, Austin, Texas.

Personal

C. E. Schermerhorn, architect, member American Institute of Architects, 430 Walnut Street, Philadelphia, Pa., announces resumption of practice, having completed his services with Military Intelligence Section, Plant Protection Division, General Staff Corps, United States Army.

U. S. POST-OFFICE AND COURT-HOUSE, AUSTIN, TEXAS.

U. S. POST-OFFICE AND COURT-HOUSE, AUGUSTA, GA. James A. Wetmore, Supervising Architect, Treasury Department.

U. S. POST-OFFICE, WESTERLY, R. I.

U. S. POST-OFFICE, WOOSTER, OHIO.

James A. Wetmore, Supervising Architect, Treasury Department.

U. S. POST-OFFICE, BEMIDJI, MINN.

U. S. POST-OFFICE, CHERRYVALE, KAN.

James A. Wetmore, Supervising Architect, Treasury Department.

BIRD'S-EYE VIEW OF THE GREATER CITY OF THREE RIVERS, P. Q., CANADA, SHOWING NEW DEVELOPMENT IN THE FOREGROUND. Mann & MacNeille, Architects and Engineers.

ARCHITECTVRE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XL JULY, 1919 No. 1

To encourage and control the physical and economic growth of the rapidly developing city a complete new city plan has been created.

A Notable Civic Development at Three Rivers, Province of Quebec

A Municipal Expansion Project Involving Important Features of Architectural and Engineering Design, City Planning, and Harbor Development

ONE of the interesting features of the reconstruction period is the increased interest on the part of city officials toward the establishment of their municipalities on the sound basis of large business institutions. The increase in cost of municipal maintenance has made it necessary not only to develop present sources of municipal income along intensive lines but to determine new sources of municipal revenue to aid in carrying the burden of administration and to keep the general tax rate on as normal a basis as may be possible.

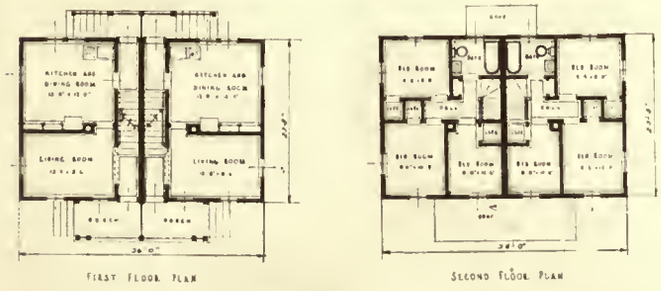
The fact is gradually becoming more clearly recognized that municipal expansion can be developed only through the application of modern methods to city business. After the preliminary stages industrial expansion cannot take place without civic expansion. The problem of labor is not only a question of wage scale but embraces the important factors of good housing conditions and the provision of various necessary community facilities. It is therefore evident that industrial expansion is not induced by the provision of manufacturing facilities alone but is encouraged by the development of those facilities which render a community an attractive place in which to establish a home.

Probably the best current example of civic development along these lines is found in the city of Three Rivers (Trois Rivières), in the province of Quebec, Canada. Here, under the direction of Mann & MacNeille, architects, engineers, and municipal developers, of New York City, various projects are being carried out for city officials and private owners involving interesting problems of architecture, engineering, industrial housing, and city planning as well as various questions of harbor development.

The history of the development of Canadian cities shows three clearly defined aspects of civic growth. The first type of development is that of the slow expansion of old cities which have gradually developed from pioneer settlements over a period of centuries. Such, for instance, has been the growth of Quebec. The second type of development is that of the conservative, modernized growth resulting from the application of sound business principles to the development of a city having the natural advantages of good geographical location. Montreal exemplifies this type of development. The third type includes the so-called boom cities which have grown as natural centres in widely exploited and rapidly

colonized districts where the sudden opening of vast quantities of natural wealth in the form of mineral deposits or undeveloped agricultural resources has brought about rapid colonization.

The city of Three Rivers, located at the confluence of the St. Lawrence and St. Maurice Rivers, midway between



Type of double 5-room house for development of National Shipbuilding Co.

Montreal and Quebec, is unique in that its recent growth and the extensive expansion which is undoubtedly to occur within the next few years is due to the application of all the forces of development which have brought about the establishment of the best cities of Canada.

During the past ten years the interest of far-sighted business men has been directed to the natural geographical advantages of this city, with the result that a number of industries have been established on a large scale and the city during that period has doubled in population.

In addition to this Three Rivers is the centre of a great, partially developed section of Canada, rich in natural resources, which during the past years has been overlooked for the more glittering promises of central and northwestern Canada. Popular interest is now returning to the eastern part of Canada, and Three Rivers, as a natural distributing point of this great section, is to be the centre of a more conservative but nevertheless extensive expansion in the near future.

The present city, having a population of approximately 25,000 persons (French, English, and American), has expanded to fill the terrain located between the angle of the two rivers and the high land to the north. The industries of the city, including extensive shipyards, six large lumber-mills, two cotton-mills (one having a spindle capacity of 75,000), and one pulp-mill (producing 60,000 tons of pulp and Kraft paper yearly), are located along both river-fronts. Other industries are located directly across the St. Maurice.

The business section of the city, including a number of stores, office buildings, and banks, extends for several blocks along the Rue des Forges in the centre of the city. Among the public buildings may be mentioned the large new post-office, city hall, schools, cathedrals, various community buildings, and several small hotels, while the remaining area of the developed section of the city is taken up with residential properties, many of them old buildings, many of which have outlived their usefulness.

As no accurate map of the city of Three Rivers existed at the time this survey was undertaken, the first work by the town planners was to provide such a map, giving accurate street locations, lines of transportation, parks, public and semi-public buildings, and other general information necessary for a comprehensive city map. By the use of existing data and through investigation, complete information for this map was collected and correlated. The final map was then prepared and a number of copies were furnished for the use of the city engineer, city officials, and others interested.

A study of the present city map shows the governing elements in the growth of this city to have been the topography, the highway from Quebec to Montreal paralleling the St. Lawrence, the Canadian Pacific Railroad, and the Coteaux (plateau back of present city). Except at some few points the plan of the existing city is good, making natural expansion easy rather than limiting it.

The water-front along the St. Maurice River has wisely

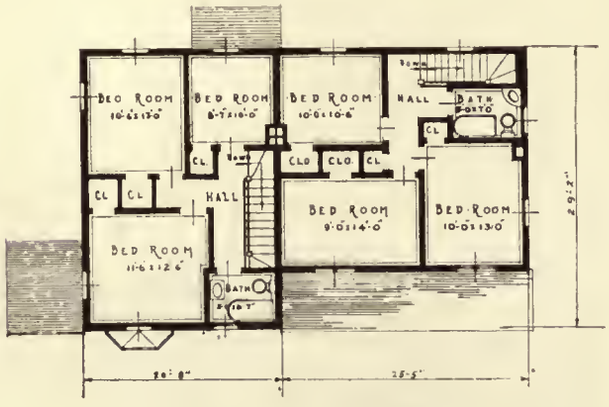
Three Rivers is noted for its many interesting ecclesiastical buildings.

been made available for industrial purposes to a sufficient distance from the river-banks, with the result that it has been disposed of to the advantage of the city. The experience gained in this section will influence the authorities to take full advantage of the St. Lawrence River frontage, where even greater existing natural advantages insure proportionately greater returns to the city. While the present streets limit this area unnecessarily, comparatively sim-

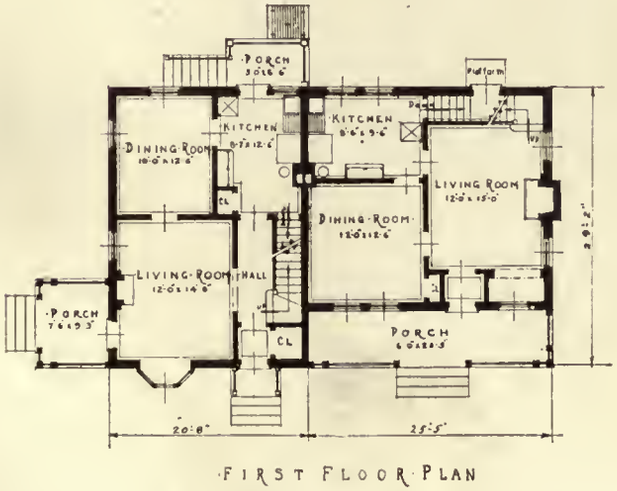
ple modifications secure the desired depth of river-front property.

Access to the Coteaux, while meeting present needs relatively well, is inadequate for the greater city, and the problem of railroad crossings will be given careful study when the location of the new railroad station is determined.

In analyzing the plan of Three Rivers and the territories beyond those now built up, it was found that not only because of its natural advantages and beautiful location is Three Rivers full of interest, but in some of the old buildings, as shown in the accompanying illustrations, much of quaintness reflects the early origin of the city and the architectural merit and substantial character of the buildings of France.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

An unusual type of double 6-room house having all advantages of the individual dwelling.

Reminiscent of the picturesque French cities are the narrow streets, old houses with their steep-pitched roofs, picturesque dormers, quaint doorways, and porte-cochères leading to yards suggestive of holding more of interest beyond. A pleasant surprise awaits the traveller at the Carré Champlain, where are brought together the religious and civic activities of the city, for on one side is found the beautiful cathedral with its contributory buildings for benevolent and educational work, as well as the home of the bishop and his coworkers, and opposite is the Hôtel de Ville, containing the offices of the various departments and of his honor the mayor.

The main business street of the city, into which many of the residential streets lead, is developed in a more modern way, with an atmosphere of purpose and activity thoroughly in keeping with such districts. The office buildings are substantial, being equipped with up-to-date improvements. The various bank buildings here found are conspicuous examples attesting to the sound financial foundation upon which business is built and offering guarantees of efficient co-operation to those planning new enterprises.

The new city plan as prepared by Mann & MacNeille (study of which is shown on the first page of this article) is divided into three aspects. First, logical and economical changes in existing street conditions in order to provide a better flow of traffic; second, a layout for the medium-class residential development which may ultimately be expected toward the west at such time as industries take up the land along the bank of the St. Lawrence; and, lastly, a general indication of the main thoroughfares on the Coteaux, at which point the more permanent high-class development of the city may be expected.

It must be understood that there is still much vacant

An example of interesting old architecture at Three Rivers.

land within the built-up portion of the city which is available for industrial, business, and residential development, and in the manner of the cities of Canada, particularly those having a high percentage of French population, it may be expected that this intensive development will be the first to take place, except in such sections where the location of industries may demand industrial housing projects and contributory activities near at hand. The city plan gives in detail the recommended location of main streets and highway system, covering the logical territory for the expansion of the city to a population of at least one hundred thousand.

It must be realized that city planning should not be approached entirely from the view-point of the city beautiful. It is not difficult to provide a plan which affords an attractive picture, but the object to be achieved is a city plan which will be more than a wall decoration. It is the purpose of the new plan to establish definite lines along which the growth of the city shall be controlled in order

Many of the new semi-detached houses are to be of unusual type.

that the greater city of Three Rivers may enjoy the many economic and social advantages of a well-planned community.

An important feature in the new city plan is a zoning system which enforces the placing of certain classes of buildings and building occupancies in certain districts. For instance, all factories must be placed in the factory zone; but this does not exclude residences, business buildings, hotels, or buildings of any nature. Similarly, in the business district no factories can be placed, as they must be confined to the factory zone, but residences or any type of building except factories may be placed in this district. In the residential district factories or business buildings are prohibited as locations have already been allotted for such buildings in the zoning system.

Provision has been made for exceptions to the zoning system and details of such exception and method of having property exempted from regulations are found in the new building code which has been prepared for the city by Mann & MacNeille.

Gracefully curving street vistas which are characteristic of this old French Canadian city.

Four principal zones have been defined on the new city plan as follows:

1—The business zone,
2—The factory zone,
3—The residential zone,
4—The city water-front,

to which may be added the various parks and playgrounds with the parkways connecting them and forming one continuous park system.

While the city plan and municipal expansion features were being worked out, another project was being carried on by the same architects. This project involved the development of a large tract of land for industrial housing for the employees of the Three Rivers Shipyards, Ltd. (National Shipbuilding Company). This necessitated the laying out of a tract of land comprising over one thousand lots and the design and location of various classes of houses suitable for the climate and type of workmen employed at the plant. Several of the house designs are shown in connection with this article, and the layout of this section of the land is illustrated on page 190.

The engineering problems involved in the development of this residential addition include street grading and paving,

The domestic architecture bears the ineradicable imprint of the French Renaissance.

water supply, sanitary and storm-water sewers. A short discussion of this subject will give the reader an idea of the difficulties to be overcome.

This problem was particularly interesting owing to the fact that the terrain upon which the city is located is low river bottom-land, common to both banks of the St. Lawrence River in this locality, and presents interesting geological features in that the various stages of the river's recession can be traced with ease. At distances varying from one-half to one and one-half miles from the river bank run a

One of the beautiful churches of Three Rivers.

series of terraces. The first is approximately thirty-five feet high, with a plain of about six to seven hundred feet in width to the foot of the second terrace, which averages twenty feet in height, with a plain of about a quarter of a mile to the foot of the third terrace, which rises for fifteen feet, more or less, and then slopes upward to the foot-hills some distance away. The soil of the terraces is gravel and sand with about two feet of loam on the surface, while that of the river bottom-land is composed of a top strata of loam and clay approximately one and one-half feet deep with an underlying strata five feet deep, composed of very fine sand and yellow clay, and a third strata of unknown depth of blue clay and sand. This latter strata forms a water-table about six feet below the surface which retains water more or less during the entire year, more so in the spring than at any other time. To drain this plain a series of parallel ditches have been dug, each approximately three feet deep by six feet wide and about five hundred feet apart, running from the terrace to the river, and these ditches also mark the farm-property lines.

The city officials will preserve these characteristic and attractive sections.

The first development in the general scheme of Greater Three Rivers is this residential section for employees of the Three Rivers Shipyards, Ltd., of the National Shipbuilding Company, a tract of one hundred and forty-three acres situated about a mile to the south of the main business section of the present city and lying between the track of the Canadian Pacific Railroad and the St. Lawrence River. The elevation of the land ranges between fifteen and seventeen feet above mean low water, having a slope toward the river of two feet in two thousand feet. This comparatively level surface is ideal for the street and water-

Moderate-cost homes for industrial workers will offer a valuable contribution to city growth

supply systems but creates a definite though not difficult engineering problem in the installation of sewerage systems, as the flat street grades necessitate deep ditching so as to obtain the necessary grades for properly draining the sewers.

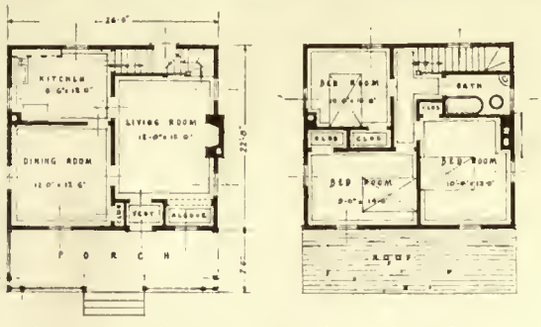
The design of the sanitary sewer system has been made to meet the following conditions:

1—Perfect sanitary drainage of all houses on the property when fully developed.

2—Separate system from that of storm sewers.

3—Separate system from that of the city of Three Rivers.

In the first condition the following assumptions have been provided for: The streets being fairly well paved and a separate storm-water sewer being provided, there will be very little opportunity for drainage water to find its way into the sanitary sewers, therefore the sewers have been designed to receive an amount of water equal to the total average daily consumption of the population. In this case the per-capita consumption has been taken at 100 gallons, equal to the per-capita consumption of the city of Three



First Floor Plan — Second Floor Plan

A six-room house for the new residential development.

Rivers. As the total population of this development has been estimated to be 6,500, then the daily consumption will be 650,000 gallons, which is equal to the total sewer discharge per twenty-four hours, or 8 gallons per second.

The second conditions were decided upon because of the additional expense incurred in combining a sanitary and storm-water sewer into one system, owing to the increased size of all mains, and also the necessity of carrying the large cutfall mains (36 inches in diameter) to the river. In the separate system, as designed, only one pipe 18 inches in diameter is carried to the river. The difference in cost between one 18-inch diameter pipe and two pipes 36 inches in diameter, which would be necessary to carry off the storm water, is more than enough to purchase the material for the entire sanitary systems. Therefore the advisability of designing the separate systems is obvious.

The third condition arising from the fact that the grades of the proposed sewers are so much lower than the grades of the existing city sewers, it was not practical to connect the two systems unless a pumping-station were provided for that purpose. As this would be a waste of funds without gaining any advantage, it was decided to discharge directly from the property into the St. Lawrence River.

The storm-water sewer system for the new development was then designed to carry off all surface water due to rain and snow, based upon the average maximum rainfall of one and one-half inches per hour in the vicinity of Three Rivers. The amount of water in the existing ditches crossing the property has also been taken into consideration as indicating the surface flow from the foot-hills, and the design has been governed accordingly. This latter feature of the problem necessitated larger sewers than would otherwise be needed.

Two schemes were designed for the disposal of this water, and the merits for each one will be discussed, together with the reasons for selecting the plan submitted. For clearness of discussion we will call the schemes A and B.

Scheme A was designed with three main intercepting sewers, along roads H, M, and S (see illustration on page 190), respectively, and these in turn discharging into one trunk sewer along road G, which in turn was carried along the continuation of road H, finally discharging into the river. For proper drainage it was necessary to so grade the sewers that the flow line of the 42-inch trunk sewer was below the foundations of the stone arch culvert at Notre Dame Street. In the construction of this sewer these foundations would be disturbed, necessitating underpinning, which would add materially to the cost. On the other hand, if this trunk sewer was omitted from road G to the river a great ditch would be formed at the stone arch culvert which in time would be undermined by the action of the water.

The atmosphere of vesper-bells.

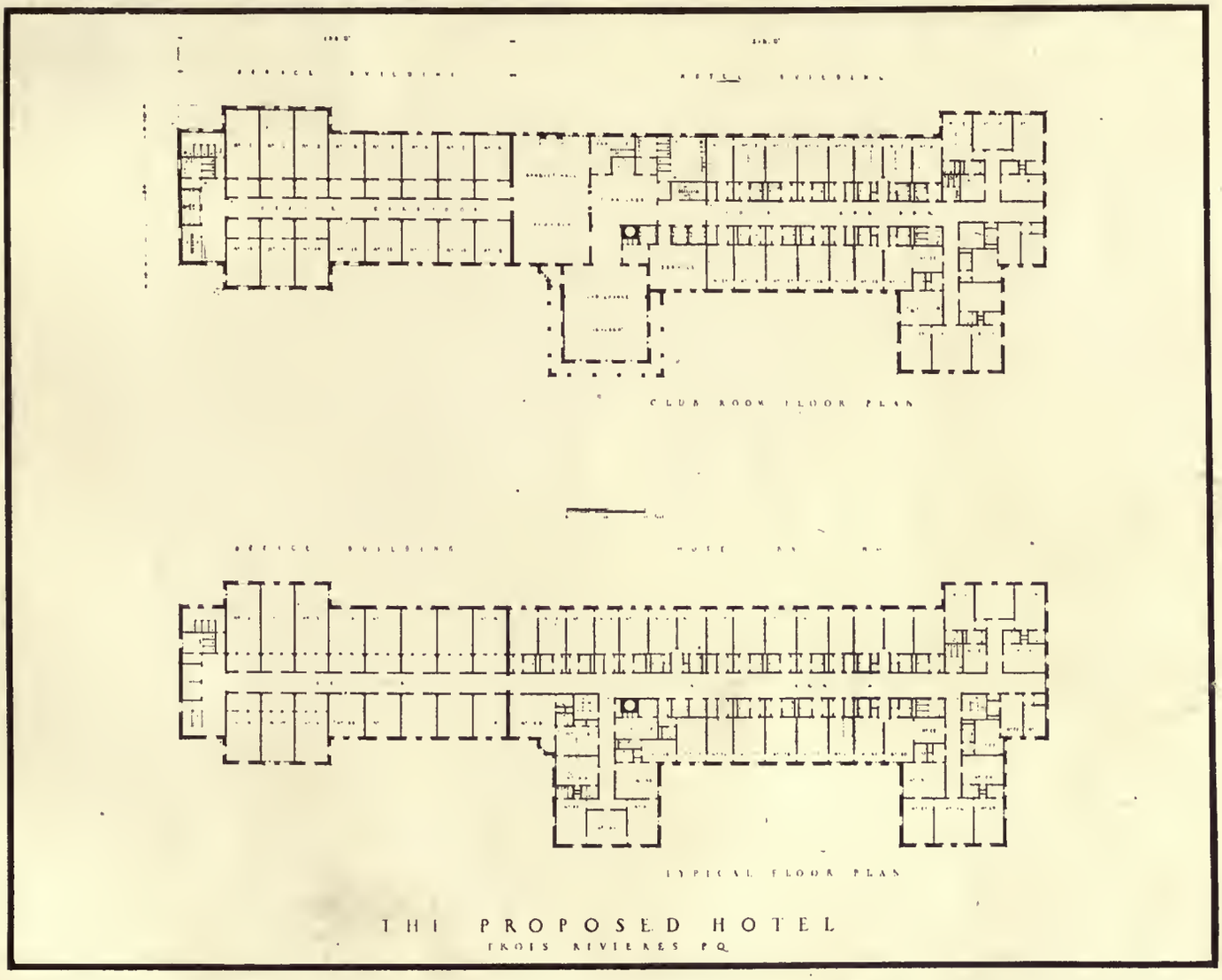
Scheme B, on the other hand, a study of the contour of the land, will show that it is possible to carry the water off in two directions, east and west, and this scheme has finally been adopted. Intercepting sewers will be located along roads H and S. These sewers will discharge into existing open ditches, which will be deepened to the grade of the sewer, from points 50 feet south of road G on the continuation of roads H and S and carried at grade to the river.

It is also intended, where open ditches cross the existing city streets, to construct a section of sewer at grade so that the street may be carried over the ditch.

The design of the water-supply system has been based upon the following assumptions:

1—The city of Three Rivers is to deliver a constant supply of water in sufficient volume to 10-inch main on the property so as to maintain an average static pressure of 50 pounds per square inch throughout the year.

2—All mains, valves, and hydrants have been designed to meet the above pressure.



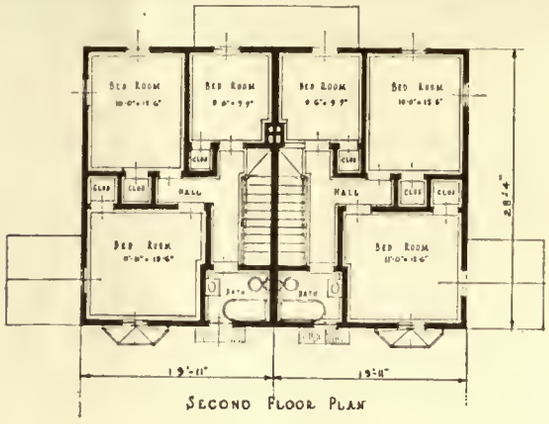
Mann & MacNeille, Architects and Engineers.

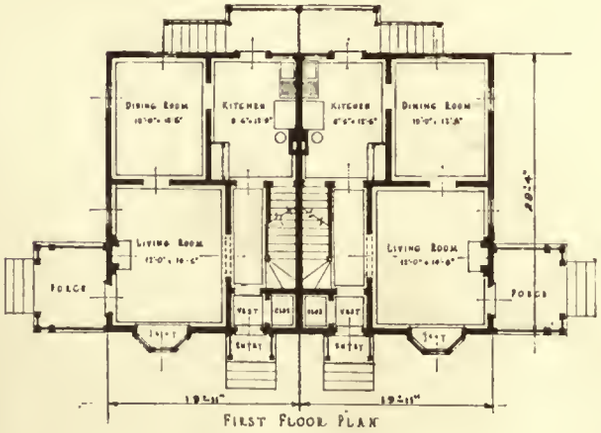
THE CHARACTERISTICS OF LOCAL ARCHITECTURE ARE COMBINED WITH EFFICIENCY OF PLANNING IN THIS DESIGN FOR A TOURIST-COMMERCIAL HOTEL AT THREE RIVERS, P. Q., CANADA.

3—Fire-hydrants have been so placed that any point throughout the development is within a radius of 250 feet of the nearest hydrant, which complies with the best practice on fire protection.

4—The same system of mains has been designed to supply the houses as well as for fire protection.

In accordance with the new city plan of Three Rivers, it will be seen that the street systems of the present city and that of the proposed development for the shipyard are connected in such a manner that the resulting effect is one of harmony instead of discord, as is often the case in new housing developments where no city plan was available to guide the developer.





Another type of six-room semi-detached houses.

Some of the main business streets of Three Rivers are paved with concrete. These were laid about two and one-half years ago and are in excellent condition to-day, but the majority of the city streets are paved with treated macadam, and this class of road pavement will be used throughout the new development, and all sidewalks, curbs, and gutters will be of cement.

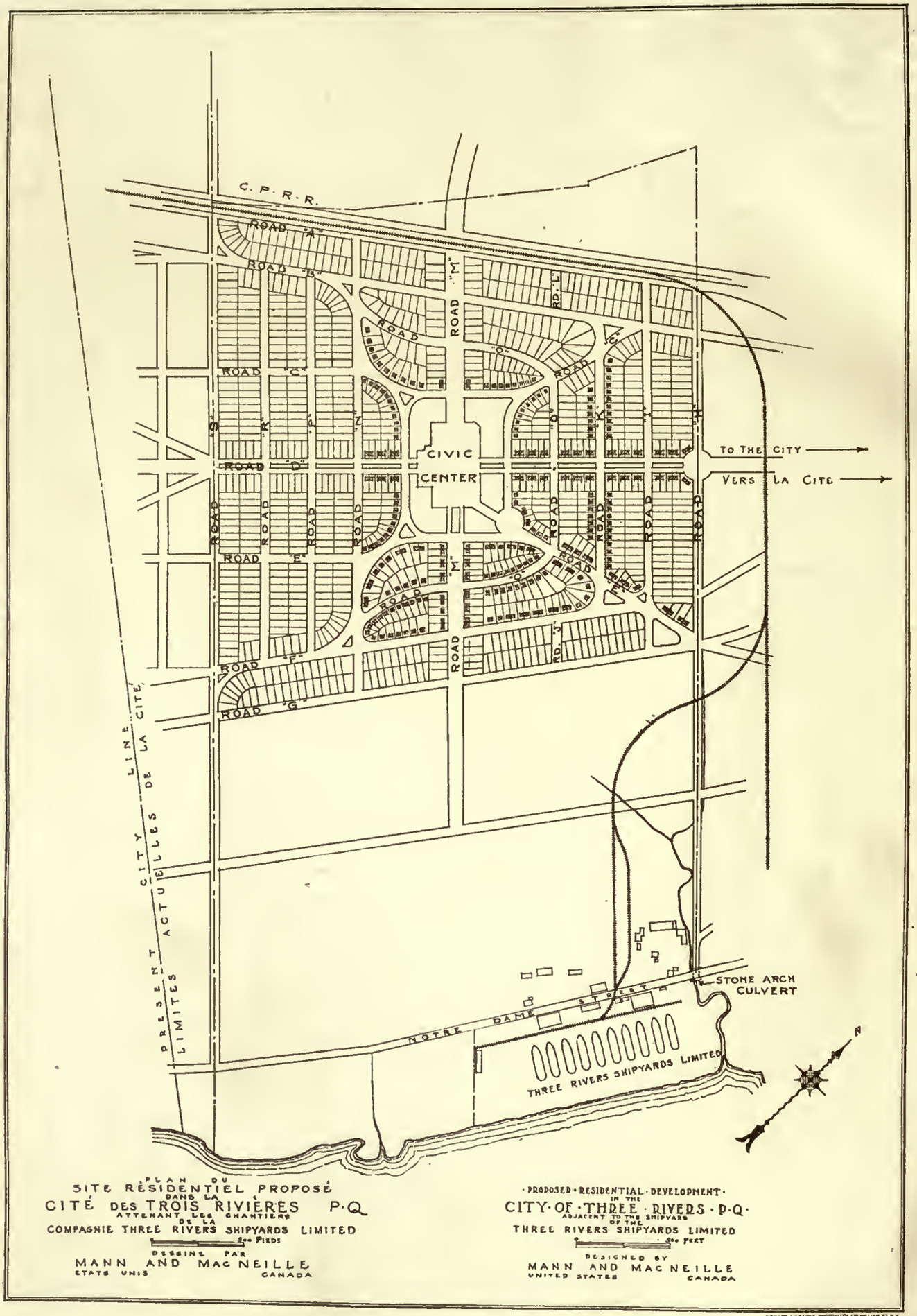
A historic house and a characteristic bit of French architecture.

In view of the need in this rapidly growing city for a tourist and commercial hotel, Mann & MacNeille have designed a modern fireproof hotel, to cost approximately $1,000,000, and to be erected at a feasible point in the city. The type of construction will depend upon the season of the year in which work is started. If the construction work is begun in the early spring, then a reinforced concrete frame and floor slabs will be used, but if the work is not started until late summer or fall a skeleton of steel frame with terra-cotta floor slabs will be adopted. This alternate design is due to the weather conditions. The temperature during the winter averages 20° F. below zero. If, therefore, concrete work were started in midsummer or fall it could not be finished before this intense cold set in, and the progress of the work would have to be stopped. It was, therefore, decided to use structural steel as an alternative. The difference in cost between a reinforced concrete structure and one of steel was found in this instance to be in favor of concrete. This 10 per cent applies only to the cost of the framework and not to the cost of the completed building.

The architectural design of this hotel, as shown on page 187, is in keeping with the better types of local architecture—a modern adaptation of the French Renaissance. The floor plans of the hotel provide two hundred rooms and special space on the top floor for the City Club of Three Rivers.

These developments at Three Rivers constitute not only comprehensive architectural, engineering, and city-planning projects, but are indicative of the progressive spirit of the city officials. With commendable foresight they are laying a strong foundation for the rapid industrial expansion which may be expected in the next few years.

Village Square · Housing Development For Three Rivers Shipyards Limited
Three Rivers P Q Canada
Designed by
Mann and MacNeille
United States Canada
1734 TROIS RIVIERES 1919



PLAN DU SITE RÉSIDENTIEL PROPOSÉ DANS LA CITÉ DES TROIS RIVIÈRES P.Q. ATTENANT LES CHANTIERS DE LA COMPAGNIE THREE RIVERS SHIPYARDS LIMITED

500 Pieds

DESSINÉ PAR MANN AND MAC NEILLE ETATS UNIS CANADA

PROPOSED RESIDENTIAL DEVELOPMENT IN THE CITY OF THREE RIVERS P.Q. ADJACENT TO THE SHIPYARDS OF THE THREE RIVERS SHIPYARDS LIMITED

500 FEET

DESIGNED BY MANN AND MAC NEILLE UNITED STATES CANADA

ROBERT A. WELCH PHOTO-LITH. LTD. WILLIAM ST., N.Y.

Editorial and Other Comment

Home Building a Natural Necessity

THE problem of housing is becoming more than a mere question of business expediency, of waiting for an impossible return to normal costs in labor and building material. It has become a national necessity. No one who has followed conditions, either in his own experience or through the reports published constantly in our newspapers, can fail to see that "build now" has become something more than a merely optimistic slogan to create business. The application of the law of the jungle, of supply and demand, to human beings who are seeking places to live in, the unlimited privileges seemingly granted to unscrupulous landlords, the squeezing from tenants regardless of all fairness, will, we believe, by the wide feeling of injustice it is creating, effect in time its own cure.

The prime thing is that time is pressing and that waiting only makes the matter more difficult. Capital naturally seeks advantageous opportunities for investment, and we believe that we have shown in several recent articles in ARCHITECTURE that both permanency and profit are to be found right now in well-directed building investments. There isn't a city in the country where there is not an immediate and urgent need of homes. Another annual rent boost menaces thousands this fall who are already paying more than they can afford for mere shelter, many of them living in shabby, ill-arranged, and out-of-date so-called "apartments."

There are the finest of opportunities presented in building large unit groups of small apartments for the very large class of poor but honest folks of the professional and semi-professional classes. The trouble with some of these enterprises in the past has been that beginning with honorable intentions they have ultimately yielded to the pressure of the law of supply and demand, and long since gone over to the get-rich-quick class.

Is it not possible for an "Own-Your-Own-Home" campaign to be fathered in the direction of these city apartments? It would be an easy matter to find many groups of fifty or one hundred home-seekers to invest, let us say, five or six thousand dollars each, in such an enterprise. Such an apartment if conducted with regard to the character, comfort, peace, and quiet of the tenants, would have no vacancies, no yearly doing over, none of the excess overhead due to irresponsible tenants, who, in the regular order of things, have been accustomed to make an annual pilgrimage in search of new quarters.

Far be it from our thoughts to imply here any element of philanthropy, of doing good, of uplift. No, let the law of supply and demand apply, but administer it with an idea of the conservation of human beings as well as the enduring profit of well-invested capital.

The demand for housing of to-day is, of course, abnormal. There probably has never been such congestion in the history of the country, for our city populations have grown faster than our building during the war period. The methods of many property owners are comparable only to those of legalized pirates or the commanders of the German submarines.

Progress has already been made toward interesting capital in present building, and the further the investigation is carried of present conditions, and the better the facts are known regarding present and future profits, the sooner this great question will be satisfactorily adjusted. The time for debate is over. Give us action lest the winter of our discontent find us unprepared.

In New York

THE conditions in New York City are by no means exceptional. We hear of a similar situation everywhere. New York is not leaving the solution to chance, however, or to merely speculative builders, who, if they have their way, will only add to the present intolerable conditions.

So serious has the housing shortage become in New York City that public-spirited citizens with expert knowledge are adding their suggestions to the surveys and plans made by the Mayor's Committee, the State Reconstruction Committee, and the joint Legislative Committee. How homes at reasonable rentals may be provided for wage-earners is the goal of these agencies, and one idea presented by a prominent citizen is that a fund of $10,000,000 be provided for the purpose of building model houses, bankers, insurance representatives, and civic organizations co-operating to assure sanitary conditions, fair rentals, and general comfort for people of moderate means.

The space now occupied by rows of ramshackle tenements of the dark ages can everywhere be put to both a more wholesome and profitable use. There are many members of the profession all over the country who have studied the most economical planning of the tenement and small apartments in our cities, who can get value out of every foot of space and provide for the light and air demanded by intelligent and yet sanitary building laws. No one with the least vision can fail to see that the problem of building homes is a most vital one. The assurance of a fixed abode, and of a rental based on an equitable return to capital, will be the best of arguments against much of our growing social unrest.

We hear of the breaking down of old barriers, of a common humanity, of a sort of brotherly-love feast born of the mingling of men from all walks of life in our armies. But what we need is a new patriotism, not born of waving flags and jazzing bands, but of the sanest of clear thinking and clear seeing of actual conditions about us. We need plenty of idealism to keep us going, but the idealism of sound thinking, not of passing emotion.

Get Together

"BELIEVE and act upon the spirit of co-operation. If you have a problem that you know your experience does not justify you in assuming that you can successfully solve, call in your brother practitioner and ask his aid, and remember that there is no problem either in the art, science, or business of architecture that cannot be successfully solved by the men in your own society.

Don't regard your brother professional man as your enemy—think of him as your friend; ask his aid in solving your problem and he will ask your assistance with his own."

The Status of the Architect

An Address by Irving K. Pond, Past President of the A. I. A., at the Fifty-Second Annual Convention of the A. I. A., at Nashville, Tennessee

I AM asked by Chairman Medary to speak for a few moments on the topic: "The Status of the Architect: Art, Profession, or Business." If this is a question it was answered properly many decades ago for the Institute by *itself*. If it is a statement, the form is improper and should be: Art, Profession, *and* Business; a "Trinity" and withal a "Unity"; a paradox which, in another field, the dogmas of orthodox Christianity have forced many to accept, and many others to contemplate with more or less strained acquiescence, or with no emotion whatsoever. But perhaps in the architectural field it is not a paradox, but upon analysis will prove to be a clean-cut statement of fact. Under whatever phase it may be discussed, however, I am going to regard it all in the light of the words of old Polonius, whose advice holds just as good under post-war as it held under pre-war conditions, and it held with firm grip then. "Above all," he says, "above all, to thine own self be true; and it must follow, as the night the day, thou canst not then be false to any man." If the architect sincerely maintains that attitude the public will soon enough recognize him in and through it, and repose confidence in him as an artist, and as a professional man who with the ordered instinct of business co-ordinates his powers and faculties and accomplishments to the end of a deeper and richer personal and public service. "To thine own self be true"—and let post-war committees and a complaining public—if it exists—go hang.

And if the architect be true to himself, what does he mean by Art? Is it what the narrow-minded structural engineer—not the engineer in general, but the narrow-minded structural engineer—for his own immediate, selfish, commercial advancement, says it is—though down deep in his own heart he knows better—a mere ornamenting of the inherent structure with pretty, or supposedly pretty, decorations? I shall not deny—but, rather, shall insist that architects have too frequently given the public, as well as the structural engineer, some show of reason for entertaining at least such a suspicion. Art means, in architecture, not the *application* of anything, but the presence of a guiding and directing spirit through whose intervention the problem should be so solved that function shall be perfect, while through and permeating the material mass the spiritual essence of order, appropriateness, and charm shall warmly irradiate. Charm is a rare word, and its essence is all too rarely distilled into architecture. Catch and hold its fleeting beauty! Art in architecture means that the desires of the soul as well as the needs of the body are fully ministered to. In this age it were perhaps better to say the needs of the soul and the desires of the body. So much, and briefly, for the art. Now for the profession.

The architect who is true to himself will be true in his professional capacity, and so cannot be untrue to the profession. (My inadvertent introduction of "and so" just here reminds me pleasantly of the rather anomalous position I occupy in discoursing in this august presence, even in response to an invitation, upon architectural art and professionalism. The *Journal* of the A. I. A. maintains and has promulgated the idea that my æsthetics, and the ethics involved therein and practised by me throughout a long series of years, are a *blight* on architecture, "from which, however," it opines, "the profession will be secure." In spite of that bar sinister, as it were, across my professional shield, I am inclined to proceed.) What is the attitude, the state of mind, the state of being almost, which distinguishes professionalism from business? It lies in a dual function of the professional mind: the one phase touching the attitude of the professional toward his client and the other touching his attitude toward his calling, including self and brother practitioner. As toward his client the professional must always hold himself in position to give full and frank advice removed from the slightest possibility of being affected by self-interest. This necessarily prevents the professional architect from engaging in the building trades, or in any building trade; or from letting a direct contract for a client in the architect's name; from operating similarly through a "cost-plus" contract, or even a "fixed fee," as this is liable —extremely likely—to bring architects into competition with each other in point of fees. The architect's disinterested position, that is from the standpoint of self, has been wisely safeguarded in the past. I hope that the Institute as a professional body will never fall from that high estate. Post-war conditions have not made it necessary.

As to the architect's attitude toward his professional self: it should be one of dignity and self-respect, so that he should not feel called upon to slink out of his clothes in the dark when he retires, shunning any waking thought of himself, but so that he should be free and glad to behold his face in the mirror as he brushes his hair in the morning. A man who considers his creative power valueless, who is willing to let any wished-for or hoped-for client illegitimately mother, and through ignorance, impotence, or abortion fail to bring forth well formed the children of his brain, has no self-respect, is not respected by others; has no sense of personal dignity and could not impart dignity or charm even to his legitimate offspring—which are justly looked upon with derision, at least with suspicion, by others. The man who offers his advice for nothing gets just exactly what it is worth—and finds the sum or the equation balanced in the minds of his clients and of the public. If architects, as a rule, were to place a value on their creations and on their advice, giving themselves not in anticipation of favors, but only for the public weal, the vexed problem of competitions would mainly settle itself; a very minor code would be needed. Until that status exists, however, a real code will be required—not a code, by the way, such as has been suggested, which inadvertently opens the field to competitions without sign of supervision, placing restrictions only about a "formal competition" which under such circumstances never would be instituted. Self-respect will beget a respect for others and will be treated with respect by others.

As for business, that term must be made to cover all, and only, the necessary financial and executive or administrative side of the profession, and must not include the participation of the professional man in contractual relations except as with the client. The Institute, through its schedules and codes, should in these business matters be of much fuller assistance to its members—and so, incidentally, to the profession, which depends upon the Institute for leadership and guidance. If the Institute sets the example and is true to itself it will make a real study of the schedule nor hesitate through fear of confusing the public or creating in its mind the impression that the architectural mind is not a unity within itself—a fact which is fairly apparent to that small section of the public which knows or cares anything about the internal working of the profession.

Theseus, Icarus, Prometheus, and Fortuna. Right side of passage in rotunda leading to State Library.

Designed and executed by Will H. Low.

MURAL PAINTINGS IN THE ROTUNDA, STATE EDUCATION BUILDING, ALBANY, N. Y.

Sculpture, Medicine and Chemistry, Painting.

Architecture, Astronomy and Geography, and Music. Designed and executed by Will H. Low.

MURAL PAINTINGS IN THE ROTUNDA, STATE EDUCATION BUILDING, ALBANY, N. Y.

Hygeia.

Aspiration.

Fountain of Youth.

MURAL PAINTINGS IN THE ROTUNDA, STATE EDUCATION BUILDING, ALBANY, N. Y.

Designed and executed by Will H. Low.

VERITAS, THE ETERNAL

Seated amid the ruins of a transitory civilization, Truth uplifts her symbolic mirror, from whose surface is reflected a ray of light illuminating a page of the volume upon which her eyes are fixed, and where may be read these words of Marcus Aurelius: "If thou workest at that which is before thee; following right reason, seriously, calmly, vigorously; keeping thy divine part pure, content with thy present activity, according to nature; with heroic truth in every word thou utterest, thou wilt live happy,—and there is no man able to prevent this." Contrasting with the clarity of the printed page and its definite message the Sphinx looms in the background. The hourglass and the Medusa head, half emerging, half hurled in the sand, connote the passage of time and the subsistence of error, against which eternal Truth eternally combats.

PATRIA, THE INSPIRER

When nomad man drew about him the units of his family and chose a portion of the earth as his abiding place, the love of country was born. Very soon his passion of attachment, his high resolve to defend his hearths and his altars, brought into being the poet to voice his patriotism and inspire his courage. In the stress of Civil War our Republic found such a voice—the voice of a woman—who gave us our battle hymn. Here an attempt is made to portray our young country, standing firmly, uplifting the palm of victory—or death—with eyes awakened to the "coming of the Lord," holding a tablet whereon are inscribed verses of the noble hymn of Julia Ward Howe. In the background lies one of the "hundred circling camps" and in the clouds above appears Homer.

ICARUS, THE SKY-SOARER

Filled with a noble discontent of his plodding lot, man, from the birth of day, has tried to break through his natural limitations. Icarus was imprisoned with his father Daedalus, by King Minos of Crete, within walls from which escape was thought impossible. To secure their liberty the ingenious elder fashioned wings from feathers dropped by birds in their passage. Ambitious Icarus, disregarding the advice of his father to steer a middle course, where the humidity of the sea would not weigh down his wings, and to avoid flying too high where the ardor of the sun would melt the wax with which they were fastened, flew within the fatal circle of the sun's radiance and fell. To-day upon his aeroplane our modern Icarus, made wise through centuries of effort, traverses the wide spaces of the sky with almost complete mastery as a reward for his long aspiration.

MURAL PAINTINGS IN THE ROTUNDA, STATE EDUCATION BUILDING, ALBANY, N. Y.

Designed and executed by Will H. Low.

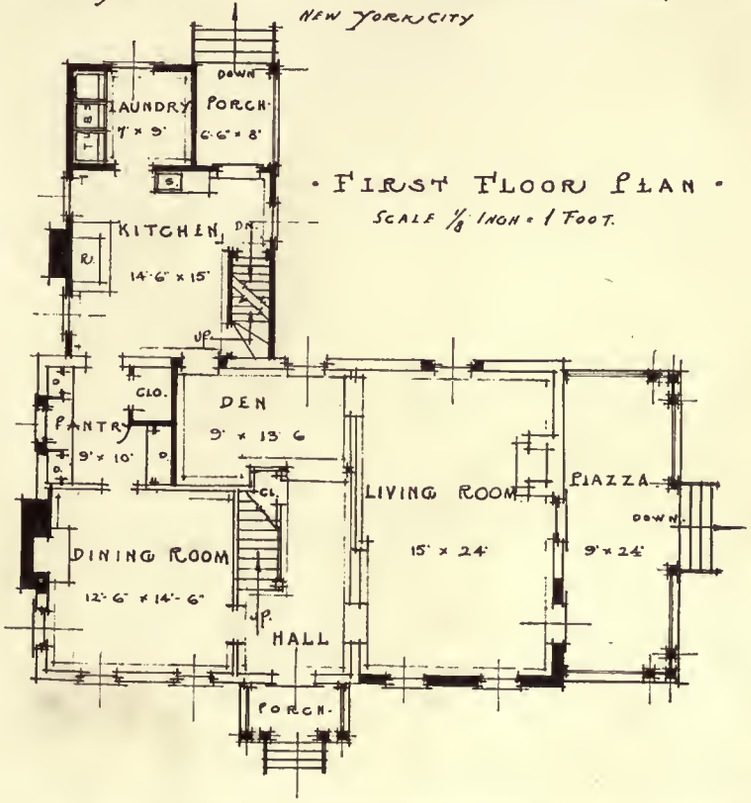
ALTERATION OF HOUSE FOR FRANK L. SAMPLE, TEANECK, N. J.

Aymar Embury, II, Architect; Lewis E. Welsh, Associate.

In this period of bigh prices and scarce labor, every attempt to conserve and reclaim old houses is of interest to architects and home builders. The house was built about eighty years ago, and was straight and square in proportions and design. To suit the conditions of the owner, it was necessary to square out the wing and rebuild a rear frame wing which was in very bad condition.

ALTERATIONS · TO · COTTAGE OF MR · FRANK L. SAMPLE TEANECK · N.J.

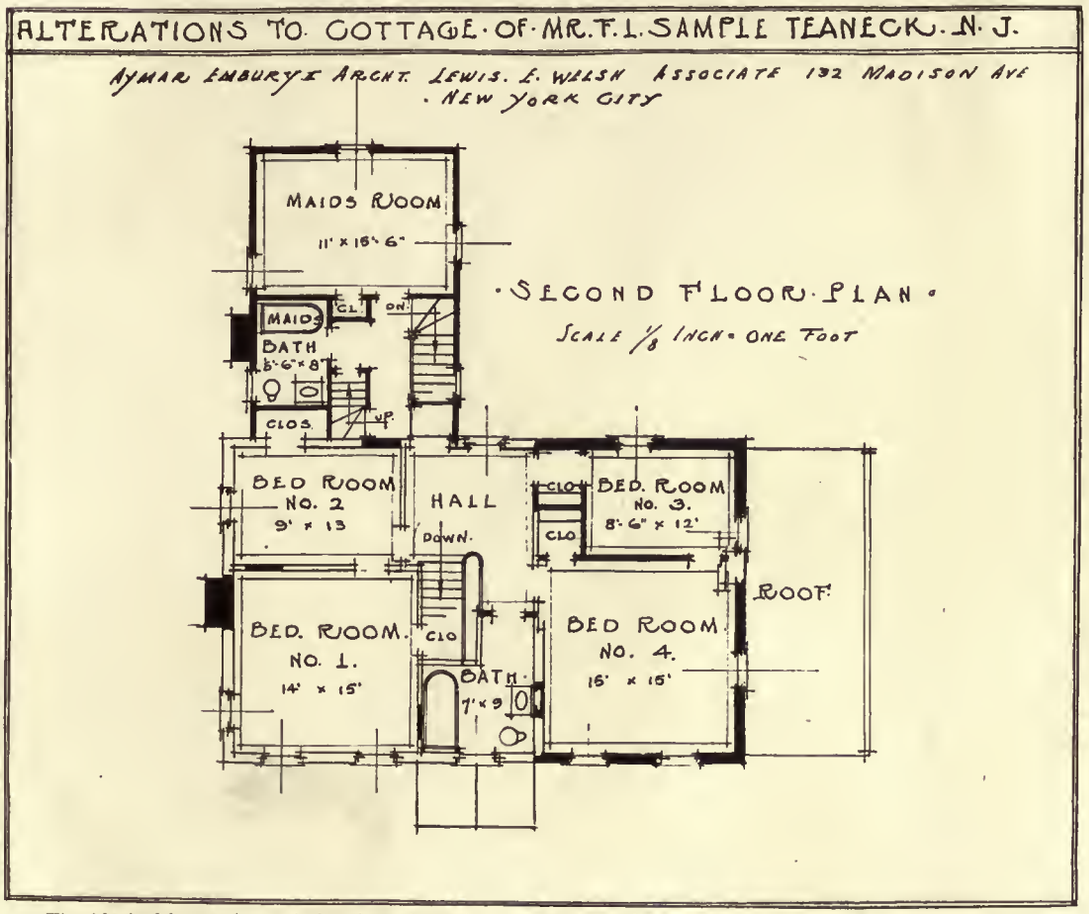
AYMAR EMBURY II ARCHT. LEWIS E WELSH ASSOCIATE 132 MADISON AVE NEW YORK CITY



· FIRST FLOOR PLAN ·

SCALE 1/8 INCH = 1 FOOT.

The architects endeavored to do as little altering as necessary to get the house ready for occupancy. The cost of this alteration was approximately $8,000; a new house of this size and construction, built at the present time, would cost almost double this amount.



The blacked-in portions of the plans show the new work, and it can easily be seen how few changes to the interior of the old house were actually necessary. On the exterior the same cornice lines and details were used in the new work, the windows were left unchanged as far as possible, and the same roof lines extended.

ST. JOSEPH'S ROMAN CATHOLIC CHURCH, FORT EDWARD, N. Y.

M. L. & H. G. Emery, Architects.

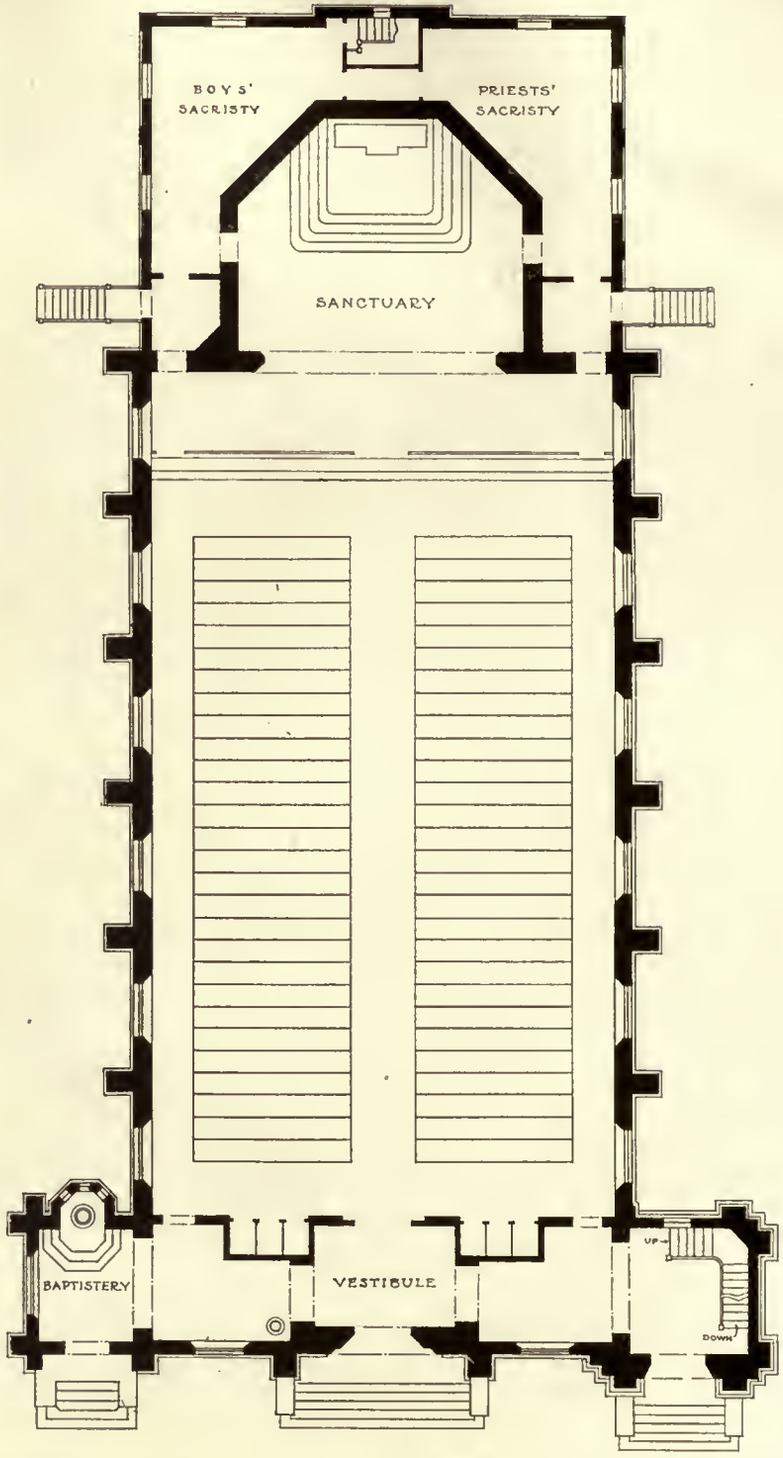
ALTAR.

AUDITORIUM, LOOKING TOWARD ENTRANCE. M. L. & H. G. Emery, Architects.

ST. JOSEPH'S ROMAN CATHOLIC CHURCH, FORT EDWARD, N. Y.

REAR.

CHURCH AND RECTORY.



PLAN.

M. L. & H. G. Emery, Architects.

ST. JOSEPH'S ROMAN CATHOLIC CHURCH, FORT EDWARD, N. Y.

"Bloomfield," Paget; built c. 1760–1765. South front. Characteristic Bermudian interpretation of Georgian style.

ARCHITECTURE OF BERMUDA.

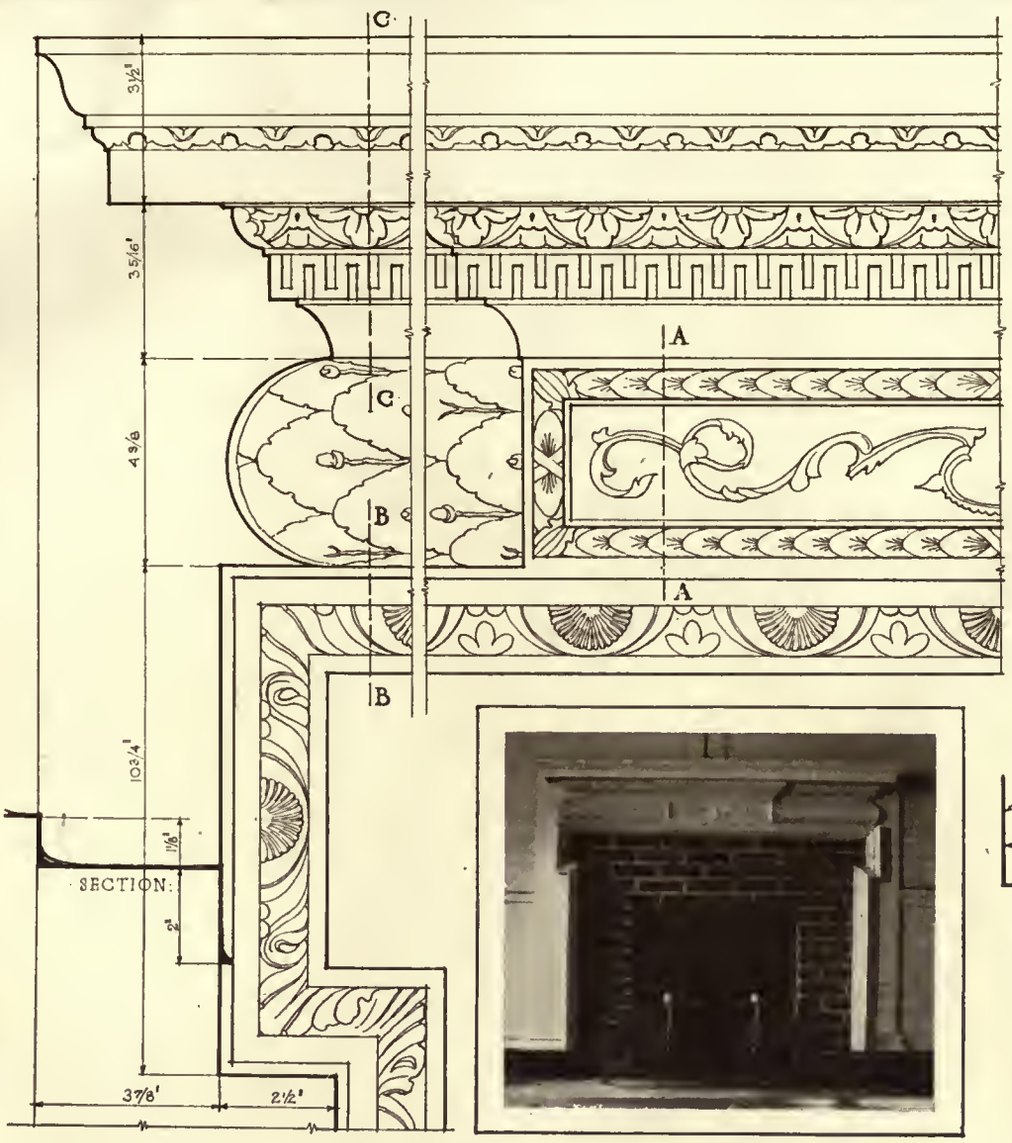
Early eighteenth century house, showing E plan, also ball finials of characteristic Bermuda contour on gate-posts.

ARCHITECTURE OF BERMUDA.

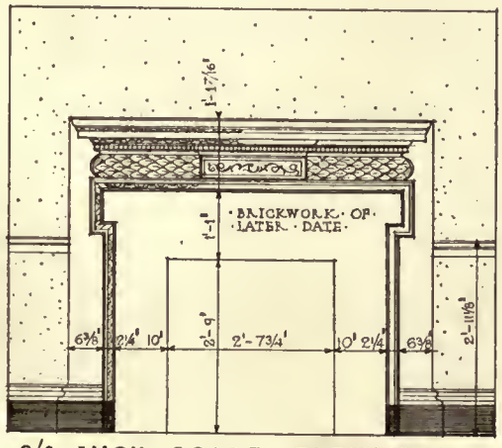
"St. John's Hill House," Pembroke; built c. 1690. Especially interesting as showing not only chimney base with battered weathering, drip-stones, and cruciform plan—this was adopted to secure all the circulation of air available—but also buttresses and ball finial at gable peak.

Late seventeenth century house, showing exterior chimney base with battered and stepped weatherings and moulded cap. Also drip-stone and cruciform plan.

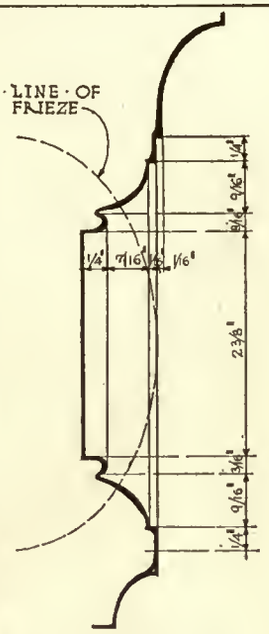
ARCHITECTURE OF BERMUDA.



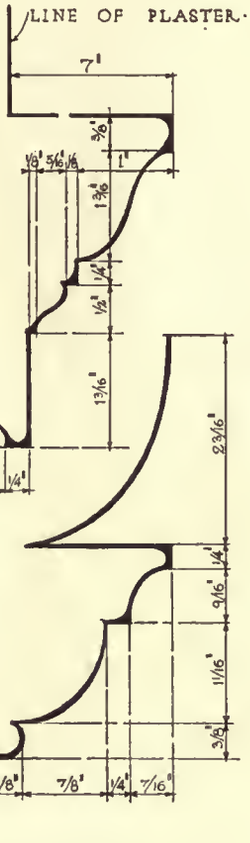
3 INCH SCALE DETAIL

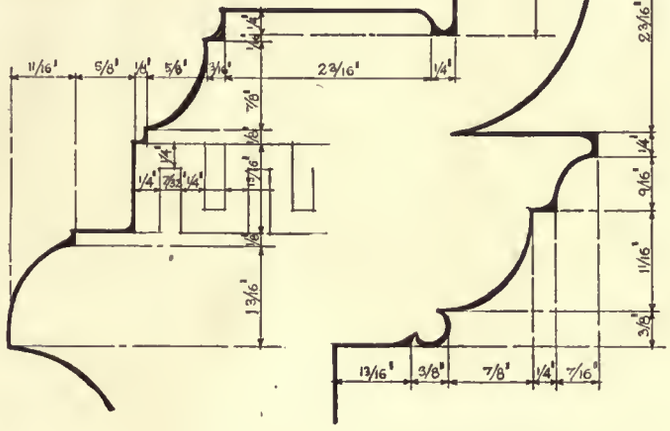


3/8 INCH SCALE ELEVATION



SECTION (A)
ONE HALF FULL SIZE





SECTION (C)
ONE HALF FULL SIZE

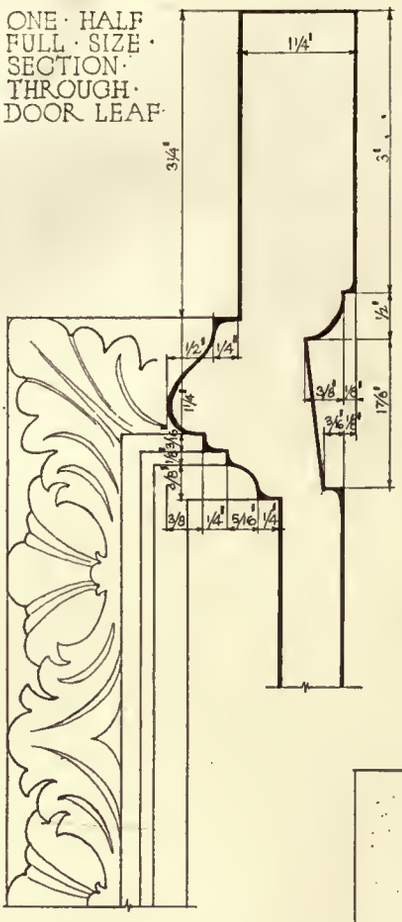
SECTION (B)
ONE HALF FULL SIZE

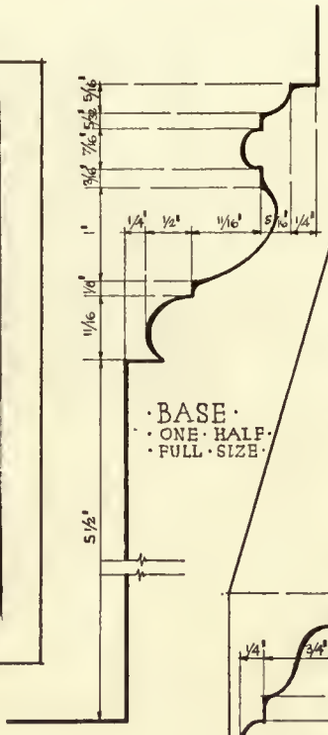
EARLY ARCHITECTURE OF MARYLAND

MANTEL
CARVEL HALL
ANNAPOLIS MD.

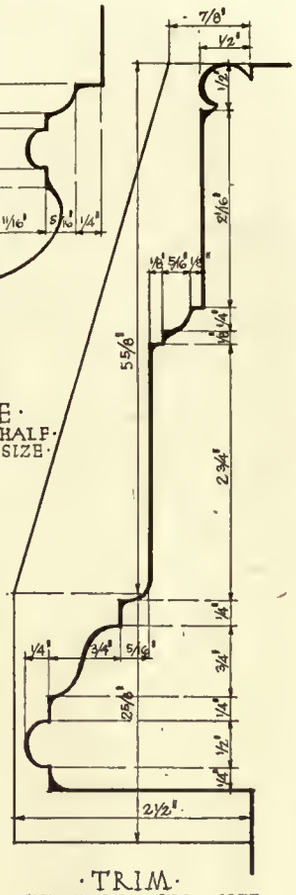
DRAWN BY
EDGAR SALOMONSKY & VERNA COOK SALOMONSKY

· ONE · HALF
· FULL · SIZE ·
· SECTION ·
THROUGH ·
· DOOR LEAF ·



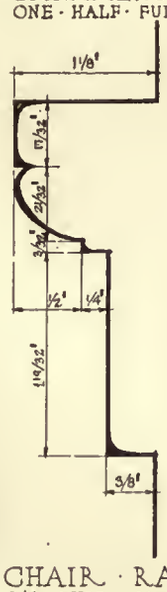


·BASE·
· ONE · HALF ·
· FULL · SIZE ·

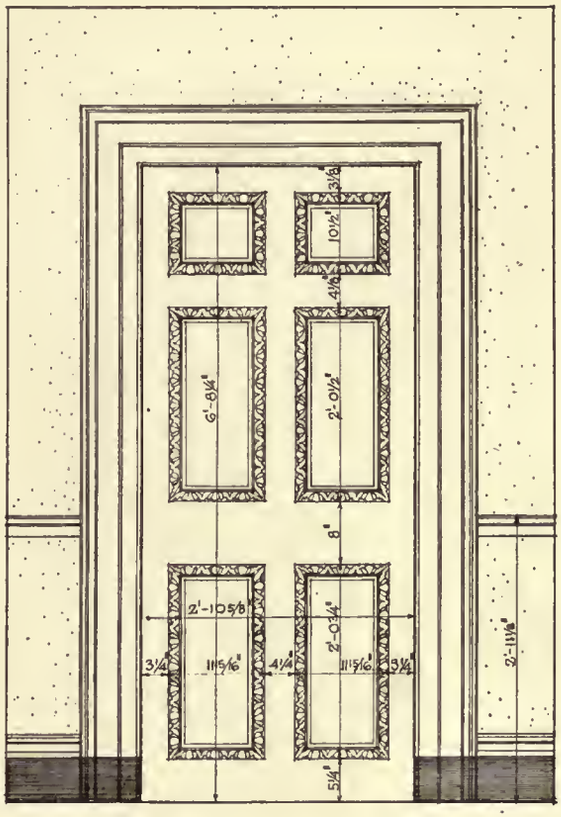


·TRIM·
· ONE · HALF · FULL SIZE ·

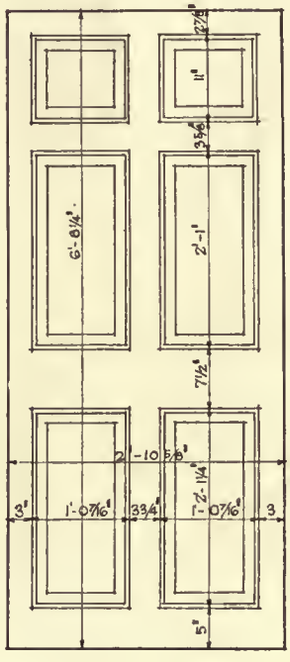
DETAIL · OF ·
ORNAMENT
ONE · HALF · FULL · SIZE ·



CHAIR · RAIL
3/4 FULL · SIZE



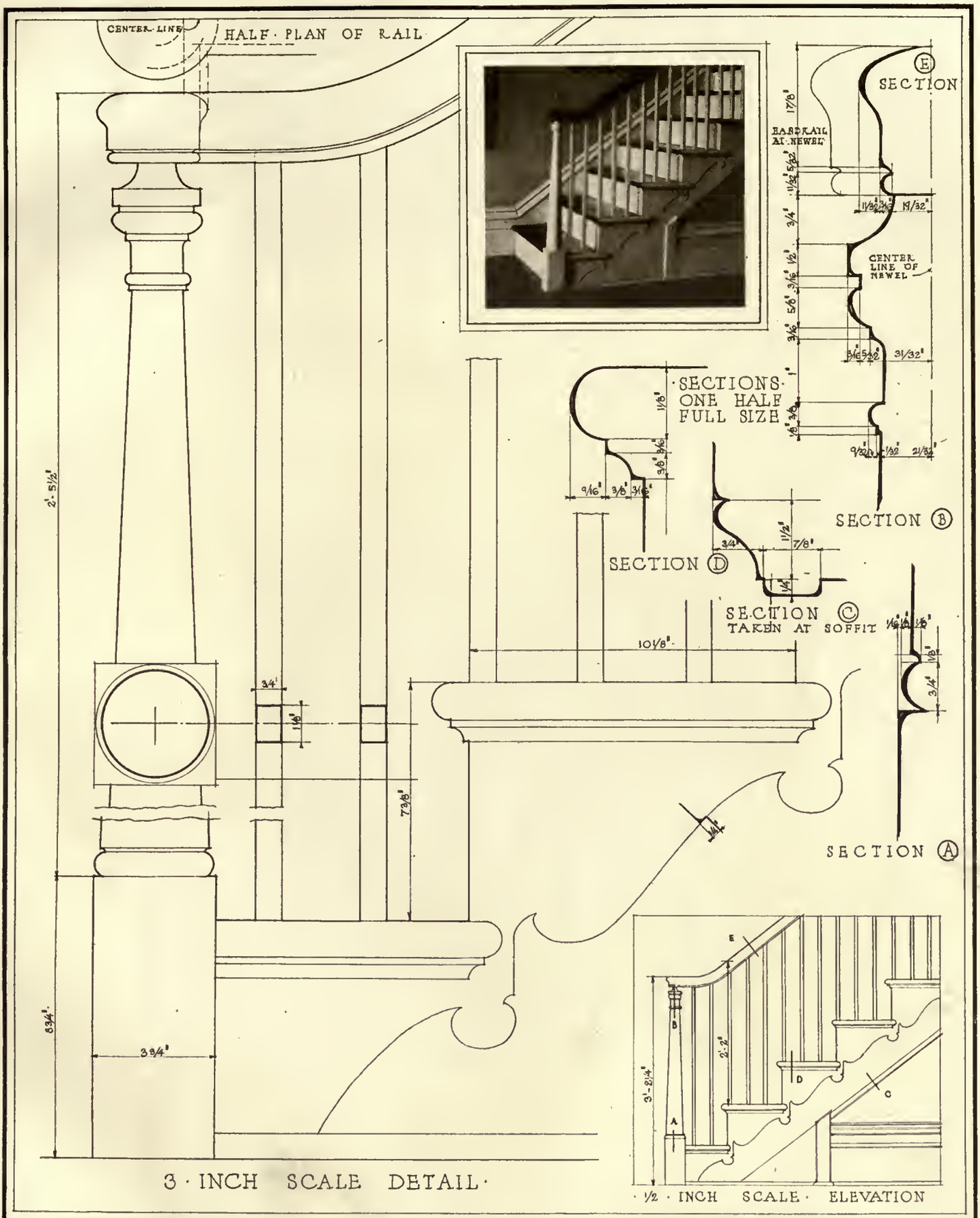
·LIVING · ROOM · SIDE ·



·HALL · SIDE

· ½ INCH · SCALE DETAIL ·

·EARLY·ARCHITECTURE· ·OF· ·MARYLAND·	·DOORWAY· ·CARVEL · HALL· ·ANNAPOLIS · MD.	·DRAWN·BY· EDGAR·SALOMONSKY·&· VERNA·COOK·SALOMONSKY·



EARLY ARCHITECTURE OF MARYLAND

STAIRWAY

STATE CAPITOL BUILDING

ANNAPOLIS MD

DRAWN BY
EDGAR SALOMONSKY &
VERNA COOK SALOMONSKY

Literature. The University. Mathematics.

Decoration in corridor, second floor.

Mural Paintings by Will H. Low in the State Education Building, Albany, N. Y.

IT is related of Ghirlandajo, the Florentine artist of the fifteenth century, many of whose works adorn Ste. Maria Novella and other churches and museums of Florence, that he nourished the ambition to cover the surface of the walls which enclosed the city in his day with paintings of his invention.

Some similar desire may have actuated Mr. Will H. Low, when, in 1912, he undertook the decoration of the corridor and rotunda of the State Education Building in the city of his birth, for already Albany possessed in St. Paul's Church a large panel of his composition, in one of its notable private residences, that of the late Anthony C. Brady, four lunettes were due to his brush, while since then, in the intervals of work upon the Education Building, Mr. Low has executed a frieze which decorates the Legislative Library of the State Capitol.

Our Standard.

In his authoritative work upon "Mural Painting," Mr. Edwin H. Blashfield dwells at some length upon the danger lurking behind the natural impulse of local authorities choosing a son of their city to decorate its public buildings, when the artist thus favored, though possibly gifted with every quality necessary for the task, except that of experience, would find himself facing the unknown quantities of scale, color, mass and line necessary to harmonize with the architectural setting provided for the mural painter.

In our short history of mural painting, instances of such mistakes are familiar to all architects and those conversant with the special art of the decorator; but few of our cities would find at hand one of its sons with larger experience in solving these peculiar problems than Mr. Low; who in the work by Mr. Blashfield above quoted, is credited, chronologically, as immediately following John La Farge and William Morris Hunt, who may be called the fathers of our present school of mural painting.

The work by William Morris Hunt, in the State Capitol at Albany, though it has long disappeared from its walls, marks indeed the very beginning of mural decoration of our civic buildings. As the first decorative work by a competent artist in this country, it seems strange that thirty-five years should elapse before the State of New York should again call for the services of a mural painter, for in the interval throughout our broad land from Maine to California the seed thus sown by Hunt had borne fruit, until to-day there are few public buildings of a monumental character erected where the mural painter and the decorative sculptor are not called in to enhance the work of the master architect.

The task allotted to Mr. Low was of major importance, not only from the amount of space to be decorated, which, though it amounts to over two thousand square feet, may have been equalled in other cases, but from the subdivision of this space into more than thirty panels, each calling for an independent composition, while almost every panel, though all are of an equal height, is of a different

width. Again, while each panel calls for individual treatment, they are in most instances so disposed upon the walls as to form groups, where they are seen with so little separation as to demand something approaching a single composition as is evident from the reproductions here shown, from which the result of the endeavor to "tie together" those groups of separate and distinct subjects by means of mass and balance may be judged, though of course the element of color, which has been equally studied to aid this treatment of the subdivided wall, can only be seen in place.

As to the subjects treated, we can best indicate the artist's intention by quoting from an official letter, sent to the Trustees of Public Buildings by Mr. Low, under date of February 20, 1912, at the inception of his task.

"The spaces to be decorated comprise thirty-two panels upon the walls of the entrance-hall and rotunda, separated in all cases by pilasters, and for the most part further divided by detached columns standing about ten inches from and immediately in front of the pilasters. Each panel is twelve feet three inches high, set into the wall about eight feet above the floor, thus lifting them above the level of the eye but well within the line of vision. . . . As to theme or subject I judge necessary to abstain from those representing actual occurrences in the educational history of the State, introducing portraiture or episodic and obvious incidents as out of keeping with the style of architecture embodied in the building and with the higher purposes for which it is designed. . . . Therefore, I shall take for my general theme—so far as a title or description in words may serve: 'The Aspiration of Man for Intellectual Enlightenment and the Results of His Attainment.' Barely stated, this theme may appear obscure or remote, but at this stage of my conception it has the precise advantage of giving the largest latitude to the imagination. . . . The whole design must eventually be orderly and consecutive, the single panels forming parts of a whole rather than relying on their individual interest; though, in this latter respect, as parts of a chain, I shall endeavor to make each link as strong as possible. . . . Throughout the series stress will be laid upon the fact that since the dawn of time certain types of men have possessed insight to fundamental truths, which we in our later day are prone to consider discoveries of our own time. Apparently, primeval man had hardly taught himself to think before he found the older myths crystallized into forms recording activities similar in essence but anterior in time to his own, and today Icarus of the Greek legend is as truly the precursor of the aeroplane as Prometheus, bringing fire from the abode of the gods, serves the industries of the moment. From the standpoint of a mural painter, the most important feature of a scheme of decoration lies not so much in its subject as in its treatment. His first duty is to provide in the space allotted to his work an agreeable pattern, in mass, in color, and in scale, that conforms to its architectural setting; that

Minerva.

shall, in a word, decorate. After that, in the degree that he may be endowed with the quality of imagination, he is justified in using it to the utmost to enter into intellectual communion with his fellow citizens. . . . For the deliberate choice of the subjects I propose to treat, I have a number of reasons. First: for their conformity in subject and style to the purposes of the building and the classic monumental character of their architectural setting. Second: for the reason that the choice of the artist imposes upon him a continuance of the same class of subjects as those upon which rests his past reputation and his present selection. Third, and last: in undertaking a task of this importance, the time seems ripe to develop in theme and in manner all that my past experience has taught me rather than to experiment in new fields. . . . Which, being foreign to the temper of my mind, might be less good in execution, while certainly they would lack the lasting appeal with which centuries of thought have endowed the themes drawn from the sources continuously fed by all that we know as education."

Large panel representing West Point Military Academy. In the foreground is shown a reproduction of three links of the heavily forged chain which in the days of the Revolution was stretched across the Hudson at West Point to bar the progress of enemy vessels.

Six years have elapsed since the artist outlined this programme, to whose fulfilment he has since devoted his entire time, working in his studio at Bronxville, retired from the interruptions of the city, and withdrawn from all other artistic activities. The complete result can best be judged within the walls of the Education Building, where the sequence of panels supply a continuous pattern of form and color around the spacious walls. The few panels here reproduced show that in the development of his theme Mr. Low has disregarded chronological limitations, and voluntary anachronisms abound in the effort to depict education in the widest sense, from the early gropings of the human intellect to our present understanding.

"Build Now"

By Harold E. Paddon, Architect

DURING our country's participation in the world's conflict, the government put a ban on building with a view to stimulating every energy in the one big purpose, *i. e.*, "to win the war," and it was considered unpatriotic to invest any money in construction work during that period.

Practically all the wheels of necessary progress on building were at a standstill, with the result that at present there is an acute shortage of dwellings to house the ever-increasing population, with the result that rental values have increased materially, thus making it almost impossible to secure a livable house at a moderate expenditure. Federal authorities, seeing these conditions, have published bulletins stating that it is now a patriotic duty to build.

Before comparing the relative costs of to-day on suburban work with those of 1914, the following quotation may be a fitting suggestion, serving as a plea for careful construction:

> "In the elder days of art,
> Builders wrought with greatest care,
> Each minute and unseen part,
> For the gods see everywhere."

The houses illustrated in this Number (see pages 197, 200, 201, 206, 207, 208) were built prior to and during the war, and with view to a broad comparison of prices it would appear that at the signing of the armistice the increase generally in the trades approximated 27½ per cent during the period of 1914–1918.

Although some of the unskilled labor increased many times the former wage, it is not logical to include the increase as staple, as it was only for a short duration and only to augment the law of supply and demand covering government needs.

Since the latter part of 1914 the costs of many of the materials required in suburban construction have been increased, and in most instances the present-day price is between 25 per cent and 30 per cent higher than the prevailing prices of 1914.

The disruption in labor conditions is playing a large part in the present wage prices in the various trades, which are continually fluctuating, thus causing a wide range in building costs in different suburban localities.

The writer recently compiled a construction chart covering a number of suburbs within a range of twenty-five miles of New York City, with a result that an increase was indicated on material and labor ranging from 28 per cent to 34 per cent over pre-war prices.

The rental values in the cities are increasing continually as the housing condition becomes constantly more acute. Land in suburban localities can be procured to-day at a reasonable figure. Banks and loan companies are now in a position to make attractive loans on substantial properties.

These facts offer an opportunity that should not be overlooked by progressive suburban developers or the individual who contemplates the construction of a home.

In giving consideration to the prospects of cost reduction, it is fair to assume that they will not be reduced sufficiently for a long time to warrant a delay in contemplated construction work, and as the country is on the threshold of an unprecedented building activity, the most logical way to reduce costs is to successfully combat the existing conditions by building extensively, this will play an important part in re-establishing prices.

Careful consideration must be given to all details, including plumbing and heating installation. "Fit to live in" should be the watchwords. In fact, nothing will be gained by building at a wholesale rate simply to cover the land in order to meet the present demand.

The initial cost should be the main cost. Upkeep must be minimized. Good houses are in demand and always will be.

To build now is a duty. To make structures "fit to live in" is the duty of architects and builders.

Announcement of Awards in the Fourth Annual White Pine Architectural Competition

The Fourth Annual Architectural Competition conducted by *The White Pine Series of Architectural Monographs* was judged at The Biltmore, New York, on May 23 and 24, by the following architects: Walter H. Kilham, Boston; H. Van Buren Magonigle, New York; Dwight H. Perkins, Chicago; Ernest John Russell, Saint Louis, and Waddy B. Wood, Washington, who composed the jury of award.

The First Prize was awarded to Maurice Feather and Niels Larson, Boston, Mass.

The Second Prize was awarded to William J. Mooney, Jamaica Plain, Mass.

The Third Prize was awarded to Leslie W. Devereux, New York, N. Y.

The Fourth Prize was awarded to Frederick C. Disque, Maurice E. Kressley, and Albert A. Farnham, State College, Pa.

Mentions

Paul R. Williams, Los Angeles, Cal.; Carl C. Tallman, Auburn, N. Y.; J. E. Maier, T. E. King, and F. Lang, Toledo, Ohio; Charles R. Mink and O. R. Eggers, New York, N. Y.; Henry Herbert Dean, New York, N. Y.; Clarence E. Wechselberger, Chicago, Ill.

All of us are indebted to Mr. Whitehead for his admirable series of White Pine Monographs. They are invariably a charming as well as valuable addition to our architectural records. No. 3 of Vol. V, recently published, contains a number of interesting "Historic Houses of Litchfield," with an introduction by C. Matlack Price.

Announcements

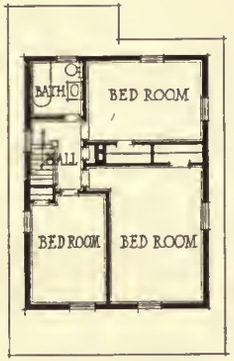
Major George Oakley Totten, Jr., architect, announces the reopening of his offices at 808 Seventeenth Street, Washington, D. C., closed during his military service with the Engineers, U. S. A.

Mr. William S. Post and Mr. J. Otis Post announce that Mr. W. Sydney Wagner and Mr. Robert R. Houston have been admitted to partnership with them, and that the business is to be continued under the present firm name of Geo. B. Post and Sons, Architects, at 101 Park Avenue, New York, and Schofield Building, Cleveland.

A SIX ROOM HOUSE

HAROLD E. PADDON, ARCHITECT.
NO. 280. MADISON AVE., NEW YORK CITY

FIRST FLOOR.

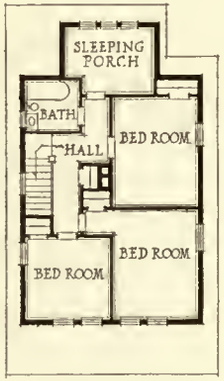


SECOND FLOOR.

A SEVEN ROOM HOUSE

HAROLD E. PADDON ARCHITECT
NO. 280 MADISON AVE., NEW YORK CITY

FIRST FLOOR.



SECOND FLOOR.

Getting What Is Specified

By David B. Emerson

IN my previous articles I told some of the many things necessary in the writing of specifications; in this one I will discuss the most important part of the work—that is, getting what you have specified.

As, to quote one of the old axioms of the Architectural League of America, "after all, the building is the thing!" so no matter how good the design may be, how well the drawings are made, or how carefully the specifications are written, it all counts for very little if the contractor does not follow them. After the draughtsmen and the specification writer have finished their work, then the ultimate question of whether the owner gets what is called for or not, lies with the superintendent. And more than one architect has had his troubles due to lax methods of superintending.

Now these, like most commonplaces, are overlooked, especially by beginners, for whom these articles are largely written. Wherever the specification calls for materials of special makes or brands, the superintendent's work is comparatively easy, as he merely has to see that they are delivered at the building in the original packages, being careful, of course, to see that one bag, can, or barrel is not used where a dozen or more are needed for the work, and to watch carefully for adulteration or substitution on the work. But where materials are specified to have certain qualities and to come up to certain standards, he must be able to inspect the materials and where necessary make certain simple tests to ascertain if they are as specified. Right here I will suggest that the superintendent in addition to the indispensable rule provide himself with a fairly strong pocket magnifying-glass, which will come in very handy many times in making close examinations of doubtful materials, where the naked eye will not be able to detect what the glass may show; a pair of calipers large enough for three-inch circles, which will often come in very handy for measuring pipe, bars, etc., already in place, also for determining the thickness of sheet metal, etc. As in my earlier articles on specification writing, I will take up the various parts of the work in the sequence in which the specification should ordinarily be written.

The first materials to be delivered at the job are almost invariably the concrete aggregates, the sand for mortars, the cement, and the reinforcing steel. Sand either for concrete or for mortars should always be specified to consist of clean, sharp, coarse grains, uniformly graded in size, the largest grain not to exceed one-quarter inch in diameter and not to contain more than five per cent of clay or loam and to be free from all other impurities.

Sand may be tested at the job, in several ways: first, by rubbing the damp sand in the palm of the hand to see how much loam can be scraped off, by crunching the sand in the hand near the ear, to tell whether it is sharp or not; the use of the magnifying-glass will give a very good idea of the shape and grading of the grains; a second test for loam is to put a handful of sand on a clean sheet of white paper, place it in the sun or near a heater to dry, roll the paper back and forth, and notice the amount of fine loam on the edge; the third, and perhaps the most accurate, method of testing sand is to put a sample of the sand in a cylindrical, clear glass bottle, fill the bottle nearly to the top with water and shake thoroughly and allow it to settle. The sand will settle to the bottom and the dirt will be on top. Measuring the column of sand and dirt with a rule will give the percentage of dirt with a reasonable degree of accuracy.

Broken stone should be inspected to see if it complies with the specifications as to size, and also that it does not contain crusher dust, in which case it must be screened to remove the dust. If gravel is allowed to be used as an aggregate in concrete, it should be carefully inspected to see if it contains a large percentage of sand, also if the stones are coated with clay or other injurious matter. If the gravel is found to contain too much sand, it should be screened; the amount of sand may be determined with a reasonable degree of accuracy by sifting samples with a hand-sieve. If the stones are coated with clay and the gravel is dirty, it should be washed.

If high carbon steel has been specified for reinforcing material, the superintendent should examine all bent bars very carefully for cracks or fractures, as high carbon steel, being very brittle, is liable to fracture in bending.

Cement can only be properly tested in a laboratory, so all that can be done on the job is to check over the mill tests, see that cement is finely ground and contains no lumps, that none of it has been exposed to dampness, and that no packages are broken. Also, see that all cement is properly stored in a water-tight shed, and well raised above the ground. Lime for mortars or for plastering should be specified to be freshly burned lump lime. Lime may be tested by slaking, and watching how it falls to powder, a good lime falling to powder without any hard core remaining. Freshly burned lime is in hard lumps, and not powdered.

Brick should be hard-burned, of even color, square, and well shaped, free from swollen, checked, or refuse brick. The superintendent can easily judge color, shape, and general condition of the brick by looking them over carefully; soft brick generally have a reddish-yellow color. To test brick for hardness, strike two together and note the sound: good, hard-burned brick ring when struck, while soft brick give a dull sound. When broken, a good-quality brick should show a compact, uniform structure. Brick should absorb some water, as an absolutely impervious brick will not lay up successfully in mortar. To test its absorptive quality set a brick in water for twenty-four hours; at the end of that time it should have absorbed not less than six per cent and not over twelve per cent of its weight in water.

Structural cast iron should be very carefully inspected for blow-holes, cold shuts, or honeycomb. The best method is to tap carefully with a hammer, especially at all points of bearing, and note the sound. Where holes have been filled with foundry sand or loam a dull sound will result, and the castings should be rejected. The inspection of lumber and timber is one of the most difficult tasks which come to the superintendent, as in practically all grades a certain number of defects are allowed by the grading rules of the lumber associations, so he must familiarize himself with those rules before inspecting lumber and timber.

Loose or rotten knots, or injurious shakes, are very easily detected. To test timber for decay, strike with a hammer; good, sound timber rings when struck, while a dull heavy sound indicates decay. Also, when a sound timber is struck lightly at one end, it can be heard distinctly at the other end

of a long stick, if the ear is placed close to the timber; but if it is decayed, the sound will be very faint. To make this last test, of course it will be necessary for the superintendent to have an assistant, so it is not very practical.

There is probably no one trade employed on a building about which there is more uncertainty on the part of the superintendent than that of the painter. In fact, the architect is practically at his mercy, except as he may use labelled materials taken directly from the original package.

Lead, oils, and varnishes are all subject to adulteration, and in many cases it can only be proven by careful laboratory tests, but a number of the more common adulterants can be easily detected by simple tests on the job.

Pure white lead, if heated on a slip of glass, will turn yellow. One of the commonest adulterants of white lead is sulphate of baryta; this may often be detected by simply rubbing a small quantity of the lead between the thumb and finger, and noting the gritty feeling it produces. A very simple method of testing the purity of white lead is as follows: Place a small quantity of the white lead to be tested on a lump of charcoal. Blow the flame from a blowpipe, either from a gas-jet or from a small spirit-lamp, on to the white lead. The lead will be quickly reduced to metallic lead, and the baryta or the silex will separate from the lead.

Red lead is very often adulterated with brick-dust, and sometimes with red oxide of iron; these may be detected by the same test as is used for white lead, only red lead will need a greater amount of heat than white lead, as oxide of iron has been burned in its preparation. This test will leave a mixture of yellow lead oxides and the red adulterants.

The commonest method of adulterating linseed-oil is the addition of fish-oil. This may be detected by putting equal parts of oil and strong nitric acid in a glass vial, shaking well, and allowing it to stand for from ten to thirty minutes. At that time the mixture will be found to have divided into two strata. If the oil is pure, the upper stratum will be a muddy olive-green, which will gradually change to brown, and the lower stratum will be almost colorless. If fish-oil has been mixed with the linseed-oil, the upper stratum will be a decided deep red-brown, and the lower stratum will be a deep red or cherry color. When varnishes are not specified by name or make, they should be specified to contain no rosin or petroleum products, and to contain at least seventeen per cent of copal gums. A very easy method of determining whether a varnish contains rosin is to put equal parts varnish and strong ammonia in a vial and shake well together. If the varnish contains a large quantity of rosin, it will set in a solid lump; if it contains a smaller quantity, a few solid lumps will result.

The inspection of window-glass is another item which also requires very careful judgment on the part of the superintendent. As all sheet glass, on account of the method of manufacture, is wavy, no glass can be rejected on account of waves. Sheet glass is specified to be either A, B, or C quality, double strength or single strength. A grade should be free from cords of any kind, stones, blisters, except an occasional small blib caused by melting or very fine dust blisters, and it must not be wavy enough to distort vision. B grade may have some of the above defects to a minor degree, but must be free from stone, surface cords, furnace scratches, pipe blisters, or small broken fragments attached to the surface of the glass. C grade admits of any and all defects except stones.

Although sheets thinner than one-eighth of an inch are acceptable as double strength, eight sheets of double strength should pile an inch high or thereabouts, a little leeway always having to be allowed.

Plate glass should be examined very carefully for bubbles and gray spots, and if an excessive number are found, the glass may be rejected.

In the inspection of building materials, there is one thing about which the young superintendent must be very careful, and that is never to condemn any materials until he is positive that they are not according to the specifications, or of the quality called for, as there is nothing which has a greater tendency to destroy the superintendent's prestige with the contractors than to be obliged to frequently reverse his decisions.

But when he is positive that his decision is right, then he should stand his ground and order any materials which do not come up to the standard removed from the premises, and no arguments, threats, or entreaties should move him, except where the owner is willing that the material should be used, and the contractor will make a proper allowance to the owner for using such materials.

Building Deficiency in the North Central States

AS a result of the war there is a building deficiency in the North Central States in the sum of $1,511,200,000, according to an estimate just made public by the Information and Education Service of the United States Department of Labor. A recent survey of building conditions in the North Atlantic States, made by the same department, placed the deficiency in that district at $1,200,000,000. The North Central States survey shows deficiencies in the States as indicated below:

Ohio	$235,000,000
Indiana	44,500,000
Illinois	317,000,000
Michigan	130,000,000
Wisconsin	131,000,000
Minnesota	273,000,000
Iowa	18,000,000
Missouri	55,000,000
Nebraska	52,700,000
North Dakota	42,000,000
South Dakota	153,000,000
Kansas	60,000,000
Total	$1,511,200,000

In each of these States building interests and real-estate boards report a shortage of residential property. Ohio and Illinois need, also, apartment houses. There is a marked shortage in school buildings in all the States, and most of the cities mentioned report a shortage of store and business quarters. A deficiency in workmen's dwellings is reported from Chicago, Detroit, Cleveland, Indianapolis, Cincinnati, and Milwaukee.

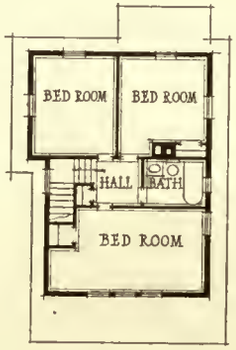
This deficiency must be made up in addition to meeting the normal current needs in 1919. In view of this fact the Department of Labor's statement that the current year is likely to prove one of unprecedented building activity seems to be fully justified. The latest reports on building permits and contracts let indicate that building construction work the country over rapidly is getting back to pre-war figures. The new normal, however, will be far ahead of pre-war figures.

The rapidity with which building and construction work is reviving indicates very clearly that building interests are convinced there is to be no material reduction in construction costs for several years, if at all. This conclusion is inescapable in view of the studies of market and labor conditions recently made by economists in the Information and Education Service of the United States Department of Labor.

A SIX ROOM HOUSE

HAROLD E. PADDON ARCHITECT
NO 280 MADISON AVE., NEW YORK CITY

FIRST FLOOR.



SECOND FLOOR.

A SIX ROOM HOUSE

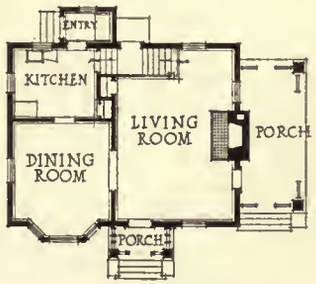
HAROLD E. PADDON ARCHITECT
NO. 280 MADISON AVE., NEW YORK CITY

FIRST FLOOR

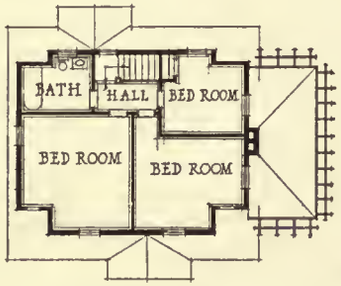
SECOND FLOOR

A SIX ROOM HOUSE

HAROLD E. PADDON, ARCHITECT
NO. 280. MADISON AVE., NEW YORK CITY



FIRST FLOOR

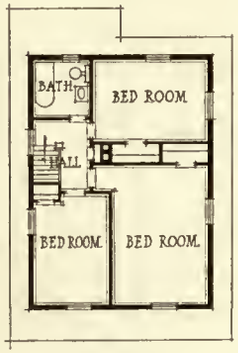


SECOND FLOOR.

A SIX ROOM HOUSE.

HAROLD E. PADDON. ARCHITECT
NO. 280 MADISON AVE., NEW YORK CITY.

FIRST FLOOR



SECOND FLOOR

Rhythm in Our Architecture*

By David Varon

FOR many years it has been the custom when any one was desirous to build himself a house, either in the city or in the country, to hunt up in his memory the most pleasing image of some Middle Ages or early Renaissance structure seen abroad, then turn to the best architect among his friends for the carrying out of his conception—or would-be conception. The result of such a procedure is to be seen especially in the productions of the last three or four decades, to the extent that in some of our cities there are whole districts looking more like the "Rue des Nations" in the Paris World Exposition of 1900 than anything else. All the styles under the sun can be seen. The Moorish rubs elbows with the mission style, and both greet smilingly the Romanesque, the great range of French and English Gothic and the score of early Renaissance, not counting all the Louis.

To-day we know better. Our people have more than vague desires. The millions lavished on education have not been entirely spent in vain. Not only have our schools of architecture been doing splendid work, but—and this is what is remarkable—a more general craving for music has begun to tell on all the products of art.

All these factors exert their great influence on prospective proprietors. And though we might apprehend some new wave of plagiarism similar to that of the eighties, the artistic education of the thousands returning from Europe will be comparatively an easy task. Though they may have been as strongly impressed by the same old châteaux and manors as were their fathers some forty years ago, they will appreciate the importance of an harmonious atmosphere and realize that one cannot transplant masterpieces wonderfully set off by appropriate scenery into a place offering not infrequently a forest of smoking chimneys as a background, a practice which does justice neither to America nor to Europe.

We knew before, and this world war has only put more emphasis on the fact, that our ways of thinking differ from those of Europeans. We are quicker in many respects and likewise our views of life are not the same. But we have many points in common with the Old World of which we are the offshoot. But in spite of this close relation, and possibly owing to it, we are inclined to live our own lives and to give them an adequate expression.

Those who are eager to know—and they are legion—by what means we can use the same architectural elements that are used on the other side and yet impart to our creations a distinctive American note, will be curiously interested in the statement, no doubt, that it is possible to further such an achievement through the application of musical principles. In the past many have gone to historic styles not only for inspiration but for patterns, and they were in many instances disappointed, while others who acted with a much freer mind, hunting only the principles of real style, found it, and achieved interesting works.

What was the latter's secret? They have understood that neither the amount of money lavished on a structure nor the heaping up of sculptures and ornaments borrowed from whatever period of architecture could impart any real merit, a real style, to their work, but the harmonious ordination of the various elements of a programme with a view to "SERVICE, TRUTH, and ÆSTHETICS." These principles well applied by persons of talent will produce original works, and nothing else will do it.

We see rhythm in nature at every step. The wind blows more or less strongly and there are either the flying clouds or the bending branches to and fro that register its fleetness. Then the waves of the river or the ocean billows make each in a way the idea of rhythm. Here is a ripple begotten by a gentle zephyr so lovely in comparison with the mountains of water lifted up by the raging storm. Between these two extremes we can conceive a large number of various rhythms marking joy or sadness, repose or strain, etc. . . . Can these sensations find place in architecture?

Whether we look on nature or on man, the law of rhythm rules everywhere. It is interesting to find a certain analogy between the craggy peaks and certain types of warriors in action; on the other hand, the gentle silhouette of a hilly country will find a counterpart in the gracefully reclining girl. Now, edifices, as a natural corollary, bear the same relation to the human being in regard to "rhythm" as does mother Nature. The inference to be derived from the foregoing is that the prevailing attitude of mind of a person will be strongly impressed on his own house if the architect has taken it seriously into consideration. After all, various expressions imply various attitudes, various rhythms. Gentle repose accompanied with a calm, quiet activity are expressed by the gently reclining and reading person. Should we follow his general outline we will soon find out that a similar one, at least in its rhythm, will be found in the silhouette of a lovely yet unsymmetrical mansion. Here life is not strenuous, neither is it altogether devoid of all activity, but what there is to be found is gentle, that makes life lovable. On the contrary, the stern and frigid person will have his home look like a barracks. The attitudes will be the same. In that severely symmetrical residence with hardly any rhythm at all lives a person very particular about things and whose companionship may be rather a strain. As a contrast we see a little further the charming welcome of the hostess written on the very premises. As the martial gait differs from the dancer's step so do the elements of architecture in their various arrangements. The reason why an architect ought to draw so much from life is precisely that expression does not depend for its action on shape and color of garments but on attitudes on the contraction or the relaxation of the muscles of the face or body.

Looking upon the coming residential architecture in this light we can see at once a new world dawning. If, according to certain authors, to each throbbing of the heart corresponds a special rhythm, the beating of American hearts being somewhat different from people abroad, owing to the more strenuous life of our citizens, it follows, as day follows night, that our architectural productions, though using elements expressed by the same vocabulary as the other side, will, on account of our different aspirations and the difference of angle from which we look upon life, be bound to have that subtle touch characteristic of its national soul which shall be called American. With the help of a more wide-spreading art education we shall, perhaps, be able to read in the very general lines or silhouette of our home the American's trend of mind. And let us hope that the popular art reading will help in bringing about the end of the riotous football-rhythmed house, for a long time too numerous in many of our cities and suburban towns.

* The author recently gave a lecture on the subject before the Institute of Arts and Sciences of Columbia University.

The Domestic Architecture of Bermuda

By Harold Donaldson Eberlein

"Bloomfield," Paget; north front and garden enclosure.

BERMUDA'S houses have hitherto had but scant attention from students of architecture. Just why, it would be hard to say, unless Bermudian architecture be one of the things habitually overlooked because of its proximity, or else because of the prevalent misconception that it is merely a degenerate Spanish derivative without any special significance.

As a matter of fact, Bermudian architecture possesses a very strongly marked individuality; it is thoroughly English in its provenance, without any alloy of decadent Hispanic influence; and, considering the present situation in American domestic architecture, it carries a body of suggestion from which we may well profit.

Between the architecture of Colonial America and the architecture of Bermuda, there exist certain clearly traceable analogies, although in the ultimate outcome each differed widely from the other. Both were developed almost wholly without architects. Both were the products of pure English tradition modified by the local exigencies of climate and available building materials. In both cases the types were determined by architectural conceptions that had become a definitely essential part of race consciousness. Both showed the result of the artisan working in the light of his inherited methods of craftsmanship and in clear recollection of forms familiar to him in England but, with practical common sense, adapting the fashion of his handiwork to the necessities laid upon him by new conditions. Both, from time to time, experienced and reflected the fresh impetus of style influences from England, which were assimilated according to the needs of the situation. In both were the transplanted root and stock English; in new soil and under new environment, both bourgeoned and fruited in a new and highly individual manner. The parallelisms proceeding from a common origin and the modes of subsequent variation afford an opportunity for instructive comparison.

There are but two native building materials in Bermuda—the rock coral, of which the island is chiefly formed, and cedar. The rock coral, when freshly sawn from the quarries and cut into blocks of the desired dimensions, is of a warm cream color that weathers to a silver-gray. When first cut it is so soft that one might almost call it plastic; it can be dressed with a hatchet or even carved with a knife. It hardens somewhat upon exposure to the weather but is so porous that, for its preservation and the exclusion of damp, walls are usually given a thin jacket of stucco or washed with several coats of a cement wash. The same rock coral, which is very light, is cut into tiles about an inch thick and used for the roofs. These stone tiles, or "slates" as the Bermudians call them, laid on stringers resting upon cedar rafters, perpetuate the Cotswold tradition of stone tile roofing. The roofs are cement-washed to make them weather-worthy and then whitewashed annually by legal prescription, to insure purity of the water-supply, which is dependent upon rainwater conveyed into cisterns.

The cedar is really a species of juniper, but so like red cedar in appearance and quality that it has always been called cedar. It would be foolish, therefore, to attempt to change the nomenclature. In the older houses it was used for everything from floors to rafters. Now, since trees of large growth have become comparatively scarce, other lumber and millwork are commonly imported from the

"NORWOOD." PEMBROKE. MANTEL DETAIL IN BEDCHAMBER.

"NORWOOD," PEMBROKE; BUILT C. 1680. SEVENTEENTH CENTURY STAIRCASE DETAIL.

STAIRCASE DETAIL FROM LATE SEVENTEENTH CENTURY HOUSE IN ST. GEORGE'S, NOW OCCUPIED AS A NEGRO TENEMENT.

"CLERMONT," PAGET; BUILT C. 1760.

"Waterlot," Southampton; parlor, showing "tray" ceiling. Parge ornaments added c. 1770.

"Waterlot," Southampton; built 1710. Showing shaped gable.

States. The old cedar woodwork is exceptionally beautiful and in its appearance curiously combines some of the qualities of both old oak and old mahogany.

The earliest phase of an English traditional style in Bermudian architecture dates from the seventeenth century, and is reminiscent of late Gothic influence as manifested in the familiar Cotswold type. Over many of the windows occur arched and corbelled dripstones—"eyebrows" the Bermudians call them—fashioned in a modified form convenient of interpretation in the local material. In not a few cases the present upright windows with double-hung sashes have replaced ranges of leaded casements, a change noted in some records as early as 1711. Slender chimney-stacks with necking and carefully moulded caps also indicate Tudor survivals from Gothic antecedents; the same influence is seen in the exterior chimney bases with battered weatherings, in the occasional occurrence of buttresses, and in the retention of finials at gable peaks, the gable ends being finished flush with the walls without moulded coping, eaves, or barge boards. The interior woodwork detail of these early houses shows unmistakable derivation from seventeenth-century English prototypes.

A later phase of Bermudian development reflects modes dominant in England in the late seventeenth century and during the reign of Queen Anne. Witness the hipped roofs and E plan along with sundry modified classic details in houses built between 1700 and 1720. Some houses of this date, such as "Waterlot" Southampton, display shaped gable ends, a feature occasionally cited as indicative of Spanish influence. For convincing proof of its direct English descent as a Tudor survival one need seek no farther than Salford Hall, Warwickshire, Montacute House, Somersetshire, Rushton Hall, Northants, Holland House, Kensington, or a score of similar instances.

"Dorchester house," Paget; built c. 1765. North front. Bermudian Georgian.

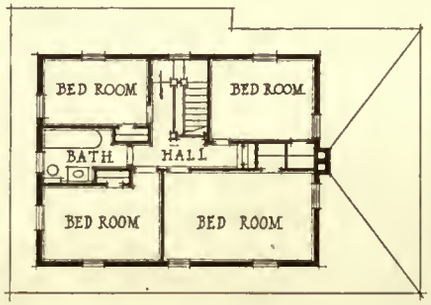
The Georgian phase in Bermuda was interpreted according to limitations of the materials. The soft, fragile rock coral was an unsuitable medium for the execution of capitals, pillars, pilasters, cornices, or finely detailed projections of any sort. A great deal of customary Georgian exterior ornament, therefore, had either to be drastically modified or altogether omitted, characteristic detail of the period being reserved chiefly for indoors. "Bloomfield" in Paget, built about 1760 or 1765, is a representative example of the Bermuda Georgian house. Here the projecting moulded corners, instead of pilasters or quoins, the rustication of the round-arched doorway, the fanlight, the hipped roof, and the generally symmetrical and formal plan with flanking wings, sufficiently attest Georgian provenance without resorting to the interior for more explicit identification. The absence of a cornice is characteristic of Bermuda for reasons already noted. "Bloomfield" is washed with salmon-pink; many other houses of the same period are similarly colored or are given a buff, yellow, brown, or gray wash. Some of the earlier houses also are color-washed, but not so commonly.

The immediate pertinence in examining Bermudian architecture is this. There is just now an urgent demand for simplification and moderate cost in moderate-sized houses. Bermudian houses, especially those of the pre-Georgian types, are sufficiently simple in plan and lend themselves to an economical programme of construction. At the same time, they possess an eminent degree of architectural interest and dignity along with their straightforward simplicity. The sense of interior amplitude in some of these one-floor houses is greatly enhanced by the "tray" ceilings which extend into the height of the roof. Without counselling any exact reproduction, one must nevertheless admit that Bermudian architecture is pregnant with suggestions that might readily be applied to stucco upon hollow tile or upon metal lath construction, and that it makes an infinitely stronger appeal than some of the modes often expressed in those media.

A SEVEN ROOM HOUSE

HAROLD E. PADDON, ARCHITECT
NO. 280 MADISON AVE., NEW YORK CITY

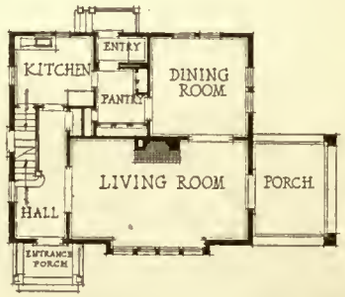
FIRST FLOOR



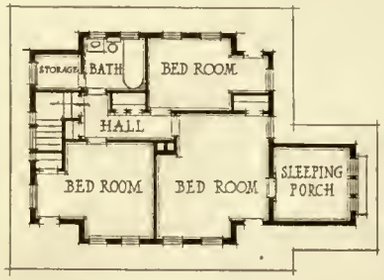
SECOND FLOOR.

A SEVEN ROOM HOUSE

HAROLD E PADDON, ARCHITECT
NO. 280 MADISON AVE., NEW YORK CITY



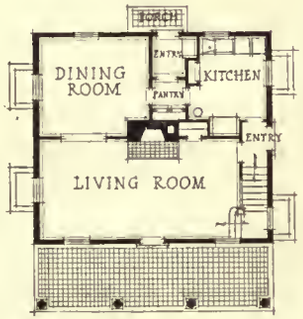
FIRST FLOOR.



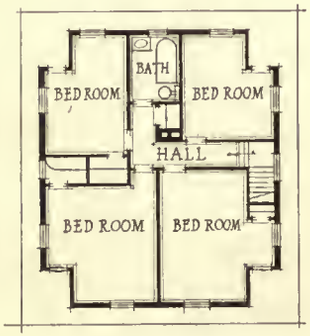
SECOND FLOOR

A SEVEN ROOM HOUSE

HAROLD E PADDON, ARCHITECT
NO 280 MADISON AVE., NEW YORK CITY



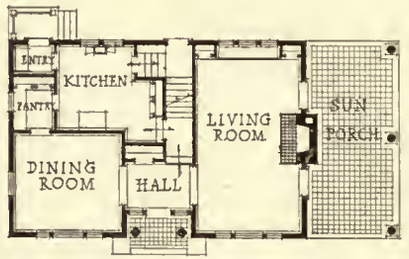
FIRST FLOOR



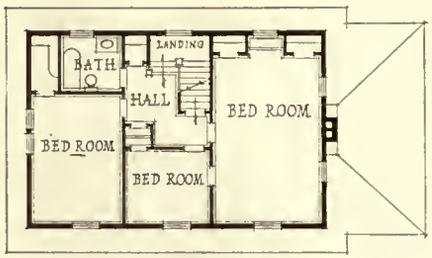
SECOND FLOOR

A SIX ROOM HOUSE.

HAROLD E., PADDON, ARCHITECT
NO. 280 MADISON AVE., NEW YORK CITY



FIRST FLOOR



SECOND FLOOR.

ANCHOR POST FENCES AND GATES

ARCHITECTS entrusting us with the execution of their designs for the Iron Railings and Entrance Gates are assured that the finished work will combine careful and intelligent interpretation of their ideas with mechanical excellence.

An attractive and helpful catalog will be forwarded promptly upon request

Anchor Post Iron Works
167 Broadway, New York

Boston, Mass., 79 Milk Street; Philadelphia, Pa., Real Estate Trust Building; Hartford, Ct., 902 Main Street; Cleveland, O., Guardian Building; Atlanta, Ga., Empire Building; Chicago, Ill., Edison Building. 2247 G

"Star" Ventilators
(Pat.)

LEADING Architects and Engineers have recognized the "Star" efficiency for ventilation by specifying them for many important buildings.

"Star" Ventilators ventilate according to the natural law. They are economical in upkeep as they contain no mechanical parts to get out of order. They are neat in appearance, storm-proof and adaptable to any type of building.

The U. S. Government adopted the "Star" Ventilator as its War Standard after rigid competitive tests.

Mark your inquiry for Dept. 52

MERCHANT & EVANS Co
NEW YORK PHILADELPHIA WHEELING
BALTIMORE CHICAGO
ATLANTA ST. LOUIS
CLEVELAND KANSAS CITY

Send for our New Ventilator Booklet

INTERIOR OF OLD FIRST PRESBYTERIAN CHURCH, FIFTH AVENUE, NEW YORK.

Restored by Grosvenor Atterbury, Architect.

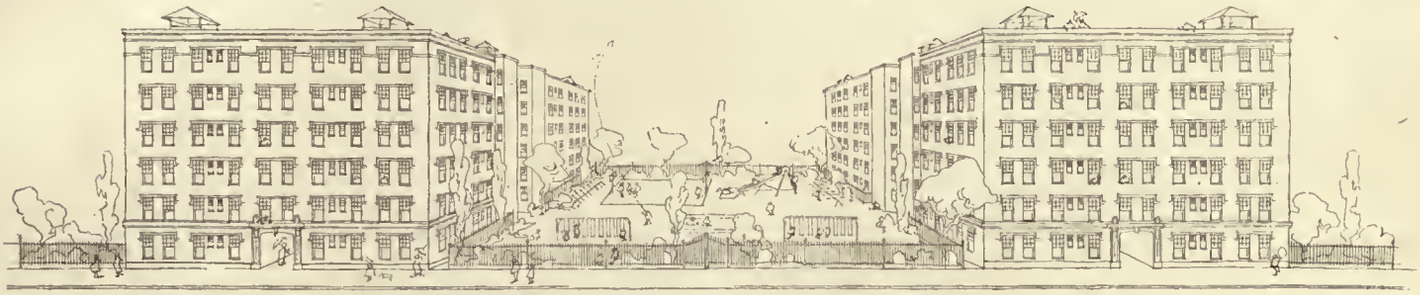
ARCHITECTURE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XL AUGUST, 1919 NO. 2

The Moderate-Cost Apartment-House

The Solution Lies in Co-operation

By Henry Atterbury Smith



Open stair dwellings, West 146th and 147th Streets, New York.

DURING and since the war there has been an earnest search for better methods of production and an honest effort for better results. Some of this doubtless is caused by the decreased purchasing power of the dollar. There was never a time when new processes of doing anything were so eagerly considered by those who are making things. Substitutes for butter to bricks are given a fair trial and if found good are given a chance to exist.

When it comes to building and financing there are doubtless many new ways of getting results that we little thought of before. Building a home was at one time a comparatively simple matter, the straw-thatched hut of the semicivilized, the log cabin of the pioneer, the peasant's cottage were quite easy. No loan was necessary, labor was ample, material plentiful, requirements simple. But now a modest home wherever found if built in the proximity of people who have touched modern civilization must have a safe water-supply, an adequate sewage system at least, and perhaps other requirements, just so that one does not endanger his neighbor.

It is a big jump from a little home to an apartment. But the jump is made wherever an apartment has been tried, and so we may see to-day some form of multiple dwelling in any little town and village. As this growth spreads it is incumbent upon those who are instrumental in bringing apartments into existence to exercise the greatest care to avoid dangers that experience surely brings to the surface.

It would seem that the greatest danger from apartments is the tendency to overcrowd the land with too many families. This is a danger that has not been adequately met anywhere in the world as far as the writer is aware. In many communities, particularly abroad, there is a limitation to overcrowding of cottages, but I have never seen a regulation that considered at the same time, for the same town, a clause applying to apartments with the identical restriction as to the number of families which may properly be upon an area.

The apartment is very much liked, its growth is amazing, but most of the apartments as we know them are crippling to mind and body as well as disfigurements to street and city or village.

Since the war many have been wondering how the apartment could be more readily and reasonably provided. A single home can be so easily conceived of and financed that it is not difficult, although there is always a shortage of these, especially little houses.

The Building and Loan Association, the nearest approach we have to European co-operation, has been a splendid instrument toward the single home. But the apartment-house has no such friend. The borrowers and loaners are both very much broadened mentally, morally, and financially by the Building and Loan Association. The unfortunate apartment, flat, or "tenement" dweller has no such field for mental, moral, and financial growth. He has a landlord that he usually hates. He puts his money in a savings-bank and gets 4 per cent upon it. The savings-bank loans it to his landlord for 5 per cent and by means of this loan the apartment is produced that nets the landlord 8 per cent or 10 per cent upon his investment.

The little home dweller in a locality where a Building and Loan Association exists gets 7 per cent upon his savings. Besides, he becomes interested and inquisitive about the whole system of financing and owning a home of his own.

But a dawn is breaking. In South Brooklyn is an object-lesson in apartment dwellings. There, some forty families clubbed together and built at 816 Forty-third Street an apartment-house co-operatively. They did not purchase stock or some of the stock after a building was in existence but they actually had sufficient confidence in the scheme and particularly in each other to buy land, build, and operate a truly co-operative multiple dwelling. Of course they were

quite homogeneous—all one nationality—nearly all of one trade and they had been schooled in co-operation abroad. Of course, too, they were driven to it. The constant raise in rent brought this about. They now live in peace of mind for about half the rent for the same accommodation. Actually half, for they save the awful waste in apartment customs as we usually practice them. They no longer fear the landlord, they are free men, which cannot be said of most of us. To my astonishment I found these buildings had been in existence several years.

Now how can this be applied more generally? This is the result wanted in the industrial town; it is also wanted by many of us in any city. It cannot be done at once, but it can be approached at once and finally become much more in vogue.

At present an apartment will usually have to be built by others than the occupants. It is a complicated building; particularly, strange to say, the further down the scale you go. It is not as difficult to erect an apartment de luxe as it is one of small quarters consisting of two, three, four, five, or six rooms, each suite having all the fundamental human requirements that produce cleanliness and refinement—that give adequate rest and leisure.

Those who build apartments should have the ultimate owners' interests in mind if progress is to be attained. The ultimate owners or some of them should be in close contact with the builders during erection, just as in having a dress made, or a boat built, or his individual house erected. The ultimate owner must then be fair and give a fair price for the good building in which future maintenance is going to be a minimum.

Let us take as an example a group of buildings to house 400 or, to be more accurate, 432 families. This is to be in a crowded city or out in a suburb of an industrial town or any intermediate place and condition.

In a city like New York these 432 families would be sumptuously located if they were upon a plot 500 ft. x 200 ft. having a street on the long sides but not necessarily having a street or avenue on the ends. On the ends their property might abut other properties similar in height and general outline to themselves. In the country let us hope that it might be built in a place where an ordinance existed limiting 10 families to an acre of land. We should then need 43 acres. In a city like New York it would be customary to place buildings with only a 26-foot yard between them in the rear. In the country there would be no rear and we could easily afford a couple of hundred feet. This would not only be enough but probably it would make the best arrangement.

Plenty of trees and shrubs could be grown in 200 feet, and vine-clad walls would further enhance the outlook. To place the buildings still farther apart would increase the running expenses without sufficiently increasing the comfort to the eye, ear, or mind.

The designer of an apartment to rent for an average of $275 per annum must weigh carefully all economies. Each must have steam heat, a complete bathroom, a modern well-equipped kitchen suite, electric lights, gas-stoves, etc., etc. The acreage could contain individual flower and vegetable gardens, a baseball field, athletic track, tennis-courts, a playground for little children, perhaps a lake; and all must be supported from the rent or dues.

The Outlay would be thus:		
Land, 50 city lots 20 ft. x 100 ft. at $2,400 each or 43 acres at about $3,000		$120,000
The 4 buildings at $190,000, including carrying charges, architects and all other fees, insurance, taxes, etc., grading roads and planting		760,000
Total cost, at $2,370 per family		$880,000
The Income from 432 apartments at $275, average		$119,000
The Expenses might be:		
Taxes, state, city, income, water, assesments	$22,000	
Operating expenses, fuel, wages, repairs, insurance, painting, planting about house and grounds	23,000	
5% vacancies	5,000	
Management and collection of rents	4,000	54,000
Net income for capital invested		$65,000
5% 1st-mortgage amortized 50-year bonds (60% of $880,000, or $520,000)	$26,400	
7% 2d-mortgage bonds ($300 per occupant, or $129,600)	9,072	
10% on remaining equity (stock), $222,400	22,240	57,712
Surplus which will amortize the 1st mortgage in less than 40 years		$7,288

These figures are based upon building costs to-day and upon a plan that can be seen in ARCHITECTURE (February, 1918), called "Plan of 1917."

It is reasonable to expect that occupants would be eager to invest even more than $300 each at 7 per cent if their capital is amply safeguarded and if they have an opportunity of being represented upon the Board of Directors and of having an adequate voice in the management. Their stock would be readily salable at par after the third year, at the latest, to tradespeople who serve the dwellers and to others knowing the property, the management, and board.

This is about as close to true co-operation as can be expected with present conditions and with a stock company. As the tenants become better acquainted with operating property which would mean a consciousness of the colossal expense of "redecorating" and attending to thousands of petty repairs caused by ignorance and negligence they could gradually acquire the stock equity if the latter were held by people willing to sell at par to them.

Then could and probably would result a dwelling approaching the ideal individual home which unfortunately is gradually falling in favor.

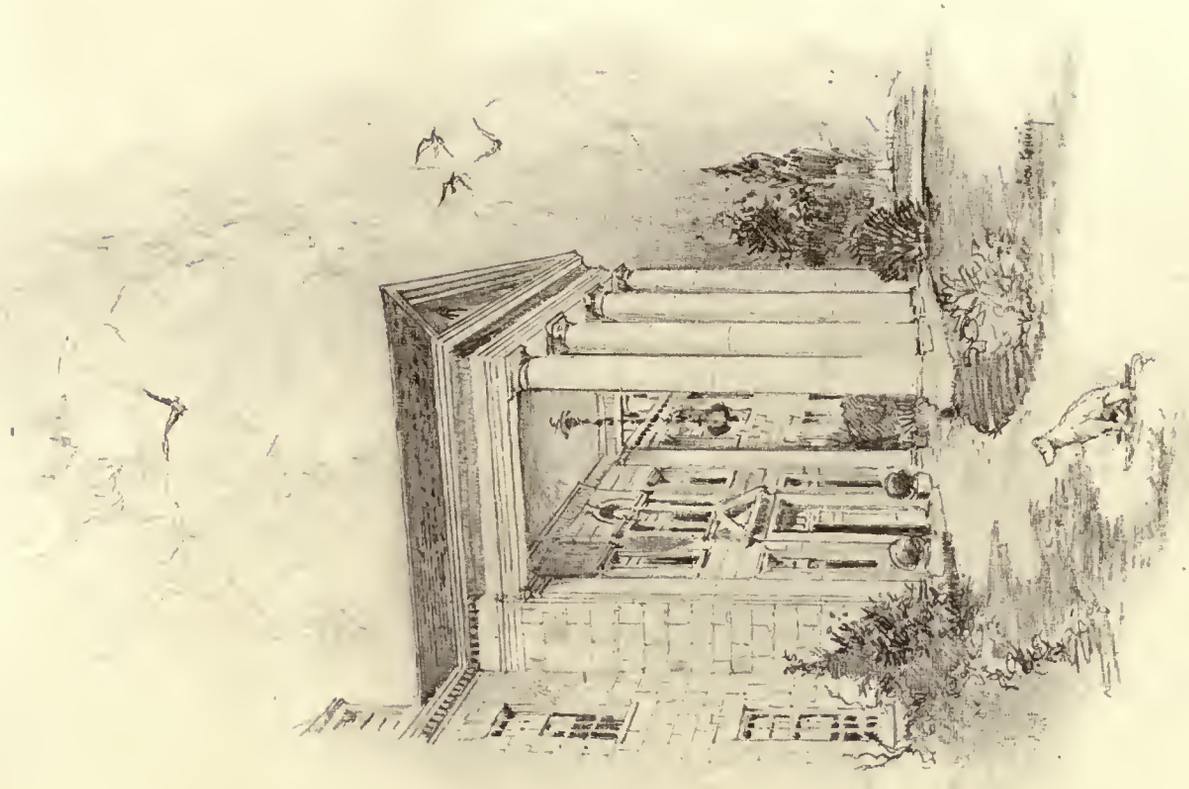
The great middle class in every city is searching and apparently in vain to find a home within a reasonable rent. The answer lies in co-operation. The tenant should become his own landlord. The occupants should own their multiple houses just as they used to own their individual houses. The great masses of professional people, clerks, and salesmen, many of them college graduates, none of whom have been helped by the higher wages of the trained mechanic, could house themselves economically and safely if they would invest, as they should, in their home instead of in all sorts of other things they know nothing about. Our present condition of home shortage may in this way serve a valuable purpose and bring out a more sensible means of building and financing a multiple dwelling than we dreamed of before the war.

MAIN FRONT, RESIDENCE, COL. E. H. R. GREEN, SOUTH DARTMOUTH, MASS.

Alfred C. Bossom, Architect.

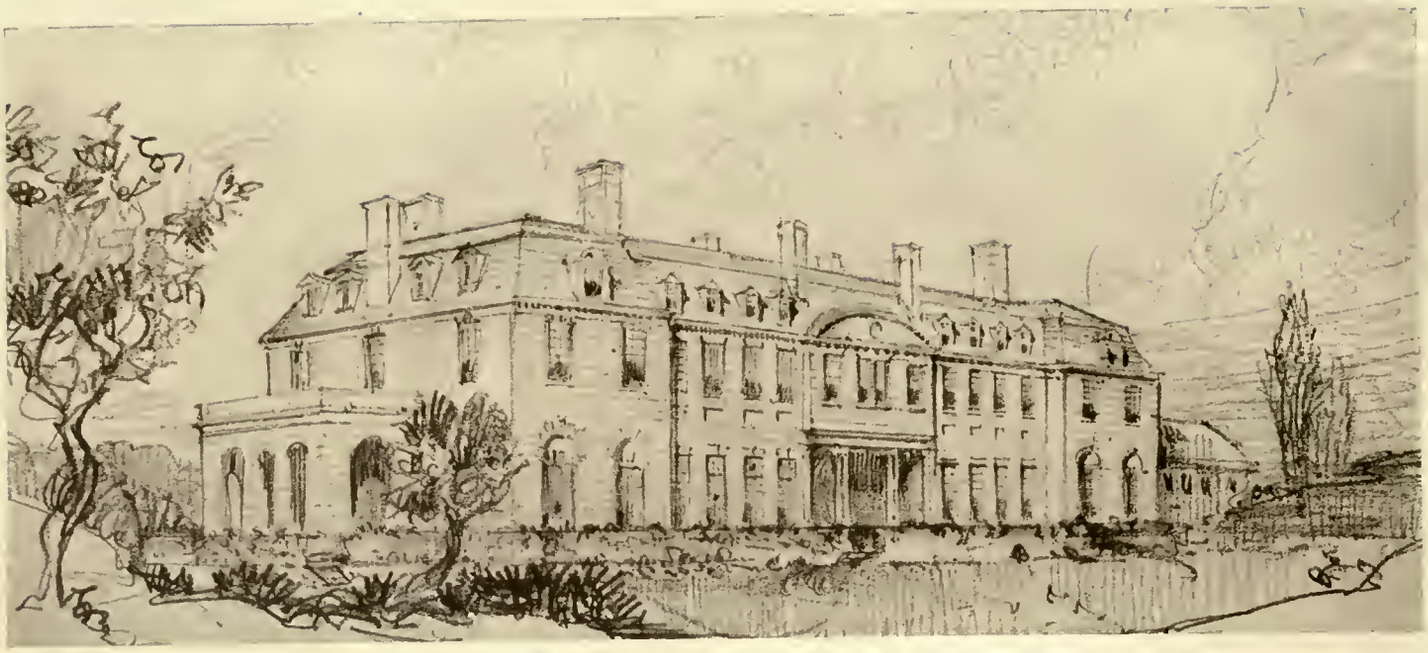
SKETCH, RESIDENCE, COL. E. H. R. GREEN, SOUTH DARTMOUTH, MASS.

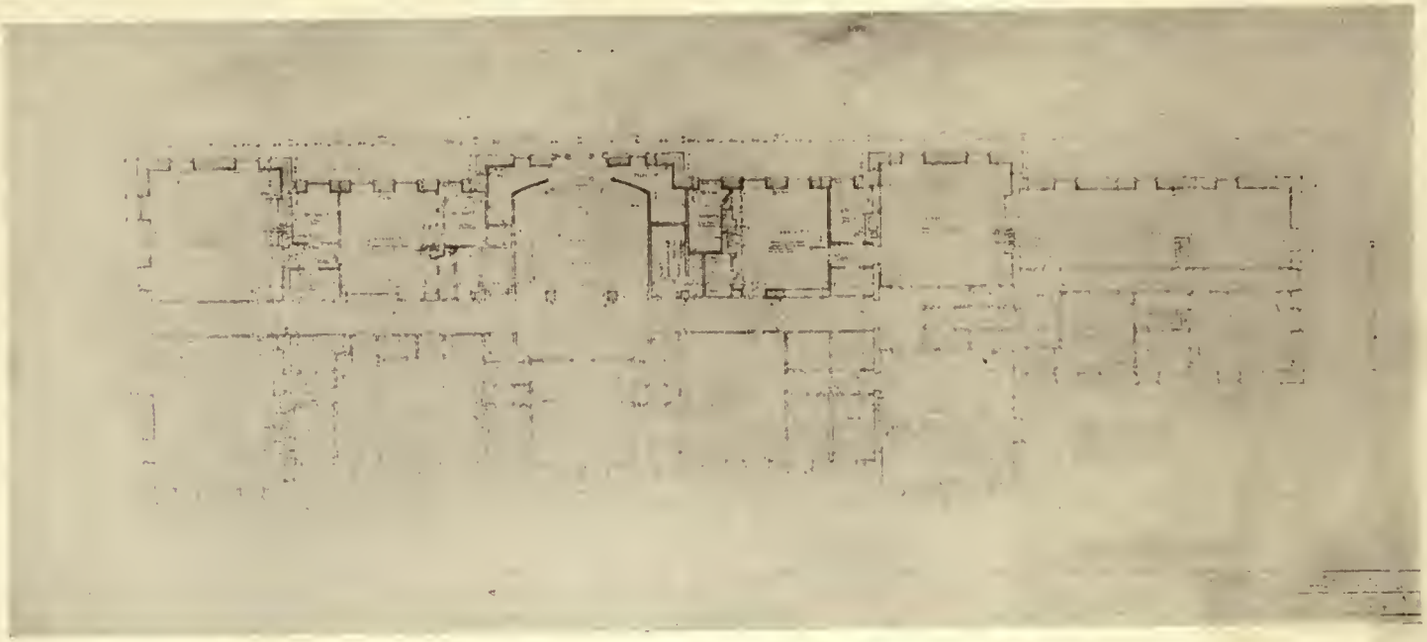
Alfred C. Bossom, Architect.

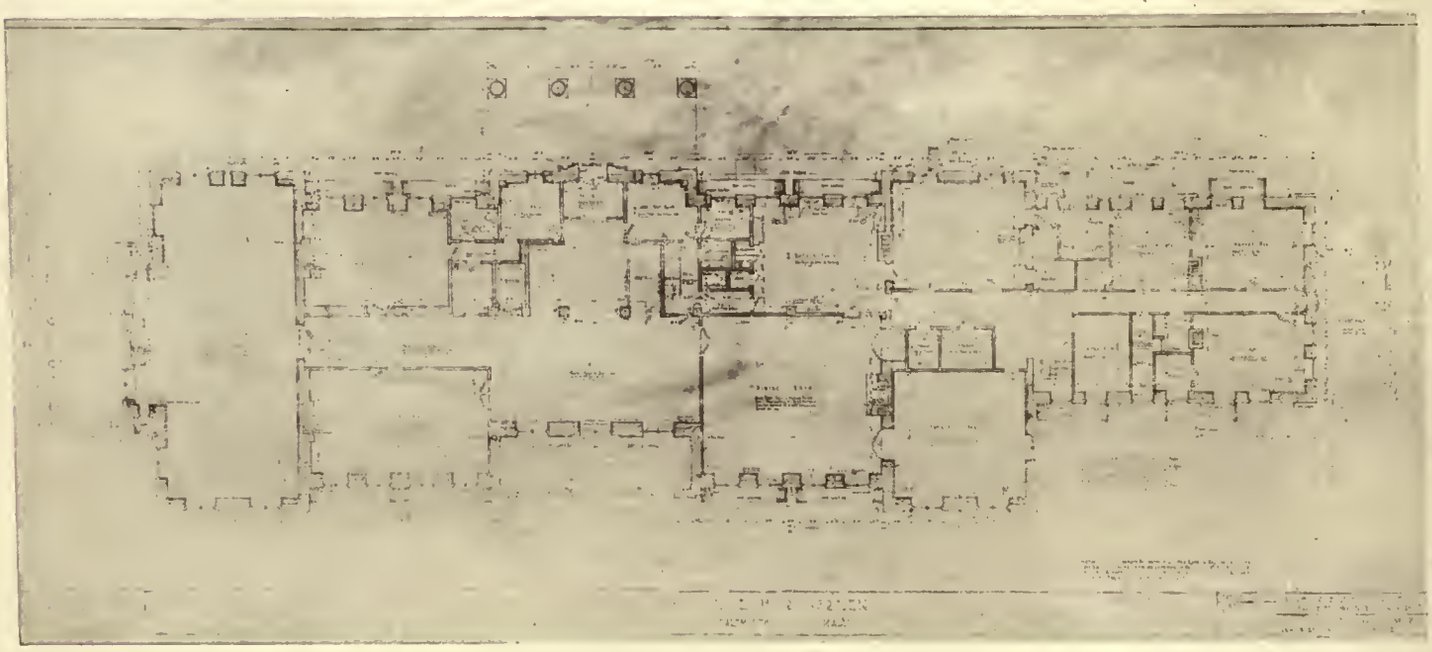


Alfred C. Bossom, Architect.

SKETCHES, DETAILS, RESIDENCE, COL. E. H. R. GREEN, SOUTH DARTMOUTH, MASS.







WATER SIDE, HOUSE AND PLANS, COL. E. H. R. GREEN, SOUTH DARTMOUTH, MASS. Alfred C. Bossom, Architect.

The Dawn of a New Era

Inaugural Address of Henry K. Holsman, President Illinois Chapter, American Institute of Architects

IF I were to take as a text a great philosophical thought—a thought typical of our individual professional lives, typical of our professional organization and typical of that age-old professionalism hitherto unorganized and unconscious of its power, but just now reaching class consciousness; if I were to use a phrase most typical of the value of that great creative, cumulative service of the minds of men for their fellow man now coming to be known as world professionalism, I would say: "The first shall be last and the last shall be first and servant of all."

My present conception of the policy of this organization lies in that text. The most important goal of our organization, of our profession, of all professions, is class consciousness. The task is one for a class, not for an individual. The President must be conscious of his position as a servant. He may help to awaken the other individuals and guide them to an awareness of their duties, powers, and responsibilities; but whatever is done that is true and good, whatever is achieved that is beautiful and therefore cumulative and lasting, must be done by the members of the organization or of the class and not by their servants, the officers. The character of a profession depends upon the character of its individuals. The reputation of a profession depends upon its organization and the participation of all in its welfare.

The architect inherits a profession built upon the oldest instincts of man and handed down from the remotest periods of history. His profession is the one great accumulation of experiences and forces imbued with the spirit of art, and art is a development of the people as a class for the people as a mass, and cannot be created by an individual. No new form or color invented by an individual (if such a thing is conceivable) can be called art unless it raises to the consciousness of the beholder past pleasures of the mind or familiar instincts of the race. He who would be an artist must serve his people with an emotional understanding of them and their past.

The profession of architecture imposes upon its members the same familiarity with the achievements of structural and social sciences. The architect must work in close cooperation and deep sympathy with other professions than his own. No individual can achieve in this profession by himself. Architecture does not depend upon the inspiration of genius but upon painstaking culture and talent and the mastery of the principles of the arts and sciences accumulated from all the ages, from men of all professional classes who have worked and thought along social, structural, and æsthetic lines. Architecture is a social phenomenon, not an individual phenomenon.

That our profession is the oldest, the broadest, and the last to come to consciousness is at once our opportunity and our responsibility. Being in sympathy with so many other professions it becomes our obligation to wake up and help to prepare for that day of full professional consciousness when men of all classes, from the humblest trade-unionist to the exalted statesman, will ask and receive of the treasures laid up in professionalism. Class consciousness is the chief reason for the existence of any professional organization.

The world is fast becoming aware of the great value of the professional man. He is the man who stands ready to serve other men in their health and happiness, in their organizations and enterprises, in all their conceptions and achievements. What great commercial enterprise or what mighty utilization of forces would have been achieved by the so-called masters of industry had it not been for the professional man who patiently and systematically worked it out, practically for the joy of achieving it; or what one of the great machines of finance or industry or what government in war or peace could survive and develop but for the continued devotion of the professional man? His services are not paid for in proportion to their value, and for some things he cannot be bought. He is born of the people, seldom if ever of autocracy. His equipment is inherited from society and he is the safest and most important trustee for the preservation and development of society the world will ever know.

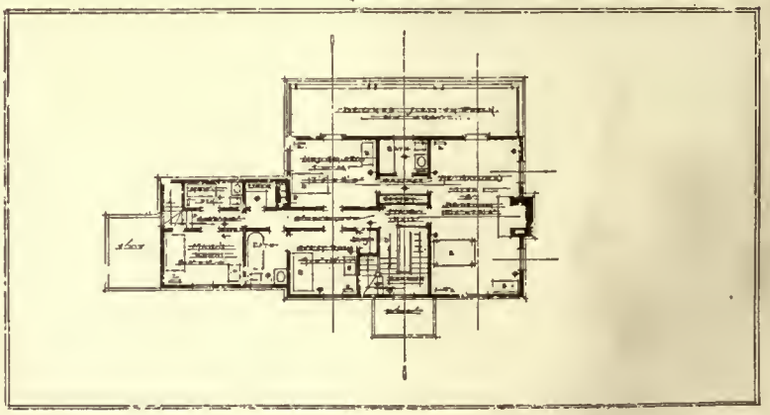
We are now awakening to the dawn of a new era. The age of kings and princes is past. The day of barons and aristocrats is waning and the day of professionalism is at hand. Professionalism carries but one banner and written on that banner is but one word—Service. The law of its being is freedom restrained by culture, training, and unbiased devotion to duty. The remuneration of its members is a known fee in proportion to the cost of preparation and the hazard of the undertaking, coupled with that distinctive mental exhilaration known to no other calling—the joy of solving a problem that makes life still more worth living.

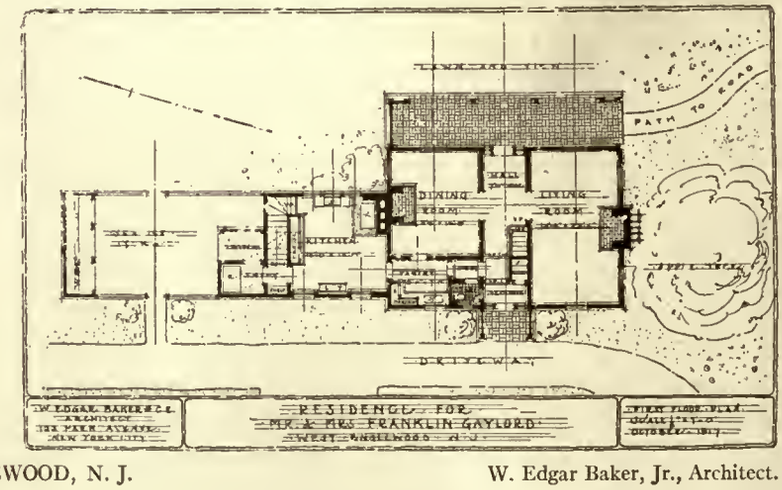
"And only the Master shall praise us, and only the Master shall blame;
And no one shall work for money, and no one shall work for fame;
But each for the joy of the working, and each in his separate star,
Shall draw the Thing as he sees It for the God of Things as They Are!"

It is our chief duty to develop our organization in order to develop our class consciousness. By serving with each other in close contact and fraternity we can develop an awareness of our combined strength and power. To belong is not enough—to participate must be the watchword. When we know each other as individuals we can make ourselves known to society as a class. We may not have been first in war, but we can be first in peace. Let us stand by the professional ideal, to ourselves be true, and unite in one great body and one great purpose, to serve organized society everywhere within the field of our usefulness, with one great unselfish professional organization—the American Institute of Architects.

ENTRANCE FRONT.

KITCHEN WING.





HOUSE AND PLANS, FRANKLIN GAYLORD, WEST ENGLEWOOD, N. J. W. Edgar Baker, Jr., Architect.

GARDEN FRONT, HOUSE, FRANKLIN GAYLORD, WEST ENGLEWOOD, N. J.

W. Edgar Baker, Jr., Architect.

MEMORIAL TO DEAN VAN AMRINGE, COLUMBIA UNIVERSITY, NEW YORK CITY. McKim, Mead & White, Architects.

Editorial and Other Comment

Mere Matters of Fact

IN a talk recently with an architect who for several years has been associated with the building enterprises of a national war-work organization, he said he had learned more practical architecture in this work than he had in all his previous practice. He expressed something of the unrest and dissatisfaction with old methods that others have been expressing from time to time, the dissatisfaction that comes to many of us with changing conditions, when we find that some essential part of our practical equipment is wanting. We have had to begin again with new ideas, based not on our dreams of the schools, on ideals of building for beauty or knowledge of the history of architecture, but upon such mere matters of fact as cost, relative values of certain methods of construction, the furnishing of estimates that will not be matters of chance, but such as will meet the pocketbooks of clients who have so much and no more to spend. There may be no possible way in these days to make exact estimates, to entirely anticipate the final cost, but at least we may know how to arrive at the closest approximations. The specification man in an office may be of inestimable service in his first-hand knowledge of materials, based on actual handling and of comparisons determined by use and time.

Money for Building

THERE seem to be, as we would of course expect, both optimistic and pessimistic opinions regarding the financing of building. When we hear of easy money we also hear of the impossibility of securing backing for some particular development. The big mortgage-loan companies are appealing for money as a patriotic necessity and dwelling on the absolute need of housing all over the country. Every one knows there is in very truth a crying need. We sometimes wonder if some of the pessimism regarding present building costs doesn't come from real-estate owners who are fearful that a programme of active building may deprive some of them of the present get-rich-quick privileges they enjoy by profiteering methods. There seems to be only one way to bring these gentry to any sense of fairness. A case in point was reported in the newspapers recently where a landlord had boosted rentals to the point of equalling annually one-fifth of the entire value of the property. Mr. Henry Atterbury Smith's article in this number gives some timely and suggestive facts. That there are abundant opportunities right now for capital to make a good profit on long-time real-estate investments by building moderate-cost city apartments needs no argument. The surprising thing to many architects who know the real conditions is that the facts have not been made to yield wider results. A great church corporation like Trinity, in New York, we believe, could use land in such developments to better advantage than in keeping it covered with small houses and out-of-date tenements. It is to such organizations that we hope to look for some help toward the solution of the city living cost. Several churches in New York have been talking of building co-operative apartment-houses, and once they get going they quickly will prove their value as investments and will be followed by many others. It is an interesting commentary upon many rent strikes to observe that in nearly every instance of greed the names of the owners, or of lessees *pro tem.*, are foreign. These people come to us to prey not only upon the public in general, but upon their own kind with as little compunction. To *build now* is the only way out of the predicament, the more than vexing question, for it is, in fact, becoming one of extreme exasperation and danger.

Building Houses by the Wholesale

MR. GROSVENOR ATTERBURY, known both in this country and Europe for his beautiful development at Forest Hills Gardens, Long Island, has been advising the Governor's Reconstruction Commission of New York on the problem of State housing. He has long been a strong advocate of a wider development of the ready-made house, and for a number of years has been experimenting along lines toward the solution of the matter. His idea is to further develop his already successful method of building houses by the wholesale of great slabs of cast concrete. We hope to have something further to say on this subject in a later number.

The Housing Problem in Europe

WE are not alone in our housing problems. The same congested conditions are reported from England, and as for France, there it is a question of very real suffering and privation. In England the tendency is toward the so-called garden settlement, of which Port Sunlight is a notable example. There is no better way either in Europe or in the United States of avoiding dangerous social unrest and extravagant waste of labor's time than in the building of comfortable and livable houses. We take the following significant facts from an article that recently appeared in the *New York Tribune:*

"The average weight of a boy of fourteen in the garden village of Port Sunlight was found to be 105 pounds, while boys of the same age born in Liverpool averaged only 75.9. The village boy was not only heavier but taller. We are apt to compare the tenement regions of English cities with our own and think we are rather better, but there are still places in New York, Boston, Chicago, and all of our large cities, where conditions are a disgrace to our civilization. We are on the path to betterment, and now with the war behind and an aroused public sentiment to back enterprise we may see an end to old conditions. We cannot stop overcrowding, maybe, but we can and must ameliorate unjust practices, brutal advantages taken of people forced by the conditions of labor to come to our cities."

In France

IN a report published the other day regarding the rebuilding of France, it said that the family who had lived in a stone house before the war would not be content with a new one built of wood. It may be rather difficult, apparently, to

establish a place for standardized houses in France. Let us trust, however, that there will be no real trouble in installing modern ideas of sanitation. Any one who has ever travelled in rural France will need no bill of particulars.

How Libraries Can Help in the Selection of Worthy War Memorials

IT is occasionally suggested that librarians should be ahead of the game and anticipate demands. Perhaps there are cases in which that is not exactly easy. Where little or no material has been manufactured the merchant cannot make a display to stimulate purchase. When little has been published on a subject of coming importance the librarian cannot offer much to guide public intentions. That was in a measure the condition about two years ago, when there were some calls for information on war memorials. There was not much to offer in answer, except Lawrence Weaver's book "Memorials and Monuments." That was issued in London as early as 1915 with the expressed hope that it "may be useful to people who are considering memorials and that it may lead them to the artist rather than to the trader." That such a move was necessary was shown by designs appearing in certain architectural periodicals within the following year. This Library's collection of pictures of soldiers' and sailors' monuments was not of great help, since much of it illustrated what to avoid, but without written comment to point out that fact.

In the past year or so there have been published articles, lectures, resolutions, and interviews, in increasing number, urging discretion in memorial-making. Various suggestions have been made: community houses, flag-pole bases, shrines, library buildings, arches, fountains, trees, bridges, and various other forms have been dilated on in the endeavor to "warn against stock patterns of metal founders" and to "save nation from war horrors," as two newspaper headlines put it. This material the Art Division of the New York Public Library has indexed and collected. The result is not overwhelming as yet—a dozen or so titles in the catalogue, and a folder of mounted cuttings—but it is a beginning. And it is a guide-post. The material points the way, while it does not furnish specific patterns. The latter hardly exist; and if they did, the cut-and-dried, so easily adopted, would again have to be avoided. It is precisely such a vicious circle out of which we are aiming to keep, without going to the other extreme of a tangential excursion into the odd. And for such purpose this beginning of a collection is offered to those interested.

—F. W.

Convention of the American Hospital Association at Cincinnati

PLANS FOR ARCHITECTS' EXHIBIT

PLANS for a really splendid, instructive and profitable display and symposium on hospital plans and principles of construction, for the Cincinnati Convention, are now practically completed and they assure one of the most interesting and instructive features that we have ever had at any hospital convention.

Ample space in the form of a large room has been set aside for this particular display and the physical arrangement will be such that plans can be shown by classes of hospitals.

The arrangement contemplates division of plans into the following classes: 1. Large general hospital groups. 2. Medium-sized general hospital groups, approximately 150 beds. 3. Small community general hospitals. 4. Isolation hospitals. 5. Isolation units in general hospitals, large and small. 6. Venereal hospitals. 7. Venereal units in general hospitals. 8. Maternity hospitals. 9. Maternity units in general hospitals. 10. Tuberculosis hospitals. 11. Tuberculosis units in general hospitals. 12. Children's hospitals. 13. Children's units in general hospitals. 14. Orthopedic and reconstruction hospitals and units in general hospitals.

It may be desirable when all plans are in and the exhibit set up to group each special hospital with the unit of the same character in general hospitals so that the whole subject of that specialty can be discussed in the symposium.

It is thought desirable not to make a definite programme as to the times of day and the days upon which talks are to be given on these various architectural and construction problems and that it will be better to wait until the convention opens and then announce by bulletin precisely when the various talks are to be given and by whom.

All the architects who are known to have created really constructive hospital work have been invited to participate in this exhibit, and with the new classified arrangement of the hospitals, attendants at the convention can be present at those meetings that are to discuss the particular subjects in which they happen to be interested at the time.

To save time it is desirable that architects who wish to show plans and superintendents of hospitals who have plans that they think will be of interest and profit and who would be willing to show them in this exhibit will please communicate directly with Dr. John A. Hornsby, who has the exhibit in charge, at his own office, Munsey Building, Washington, D. C.

TENTATIVE PROGRAMME

Section on Hospital Construction: Dr. George O'Hanlon, Chairman.

Fire Hazard in Hospital Buildings—Extent and Remedial Measures: Mr. W. D. Crowe.

New Features of Hospital Building Equipment: Mr. E. F. Stevens.

When to Plan and When to Build: Mr. Wm. O. Ludlow.

In Planning a Hospital, Build with reference to its Future Development: Mr. Oliver H. Bartine.

Discussion: Miss Jean Allison Hunter, Grace Hospital, New Haven.

Departmental Division of Heat, Light and Power Costs: Mr. D. D. Kimball, Dr. H. M. Pollack.

For Better Public Buildings

THE Department of Institutions and Agencies of the State of New Jersey, with a view to improving the character and getting more practical results in the erection of public buildings, have invited a number of prominent architects and engineers to act as an advisory committee with the State Architect in the planning and designing of future work. Those already asked to serve include:

Colonel William A. Starrett, 8 West 40th Street, N. Y.

Walter E. Kidde, 140 Cedar Avenue, New York.

William O. Ludlow, Madison, N. J.; New York Office, 101 Park Avenue.

James O. Betelle, 44 Park Place, Newark, N. J.

Major S. S. Paintor, Short Hills, N. J.

Otis Post, 101 Park Avenue, New York.

John Lippincott, Haddonfield, N. J., new superintendent of the Turner Construction Company.

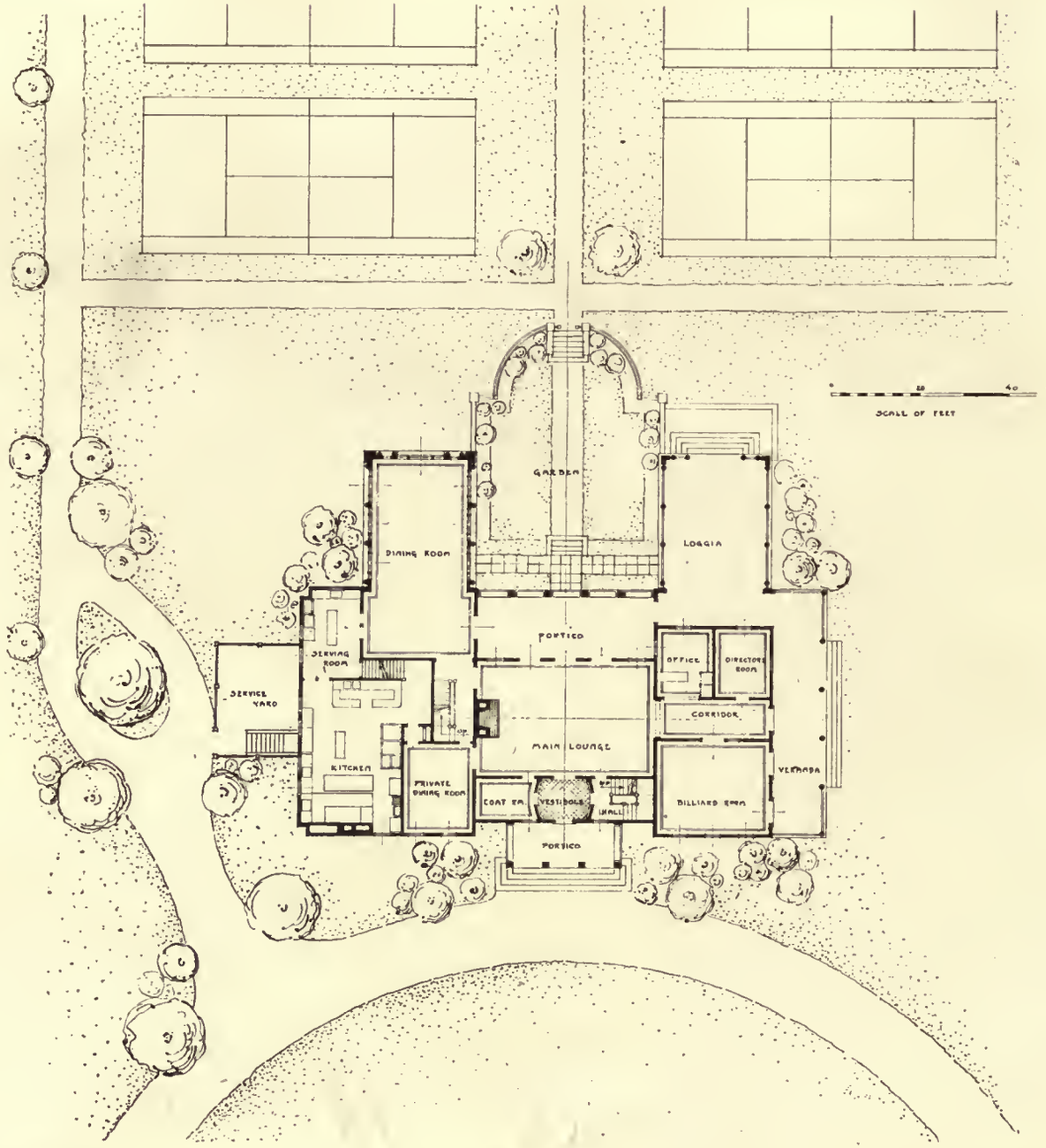
GARDEN CITY COUNTRY CLUB, NASSAU BOULEVARD, LONG ISLAND. Morrell Smith, Architect.

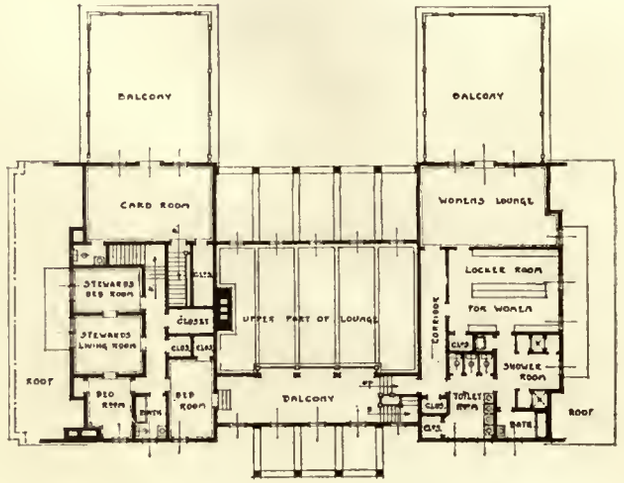
FROM THE GREEN.

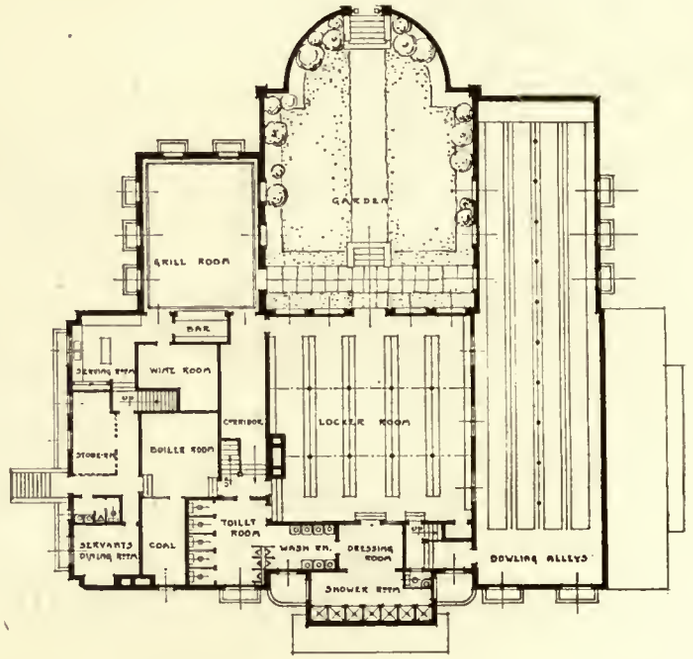
MAIN LOUNGE.

GARDEN CITY COUNTRY CLUB, NASSAU BOULEVARD, LONG ISLAND.

Morrell Smith, Architect.

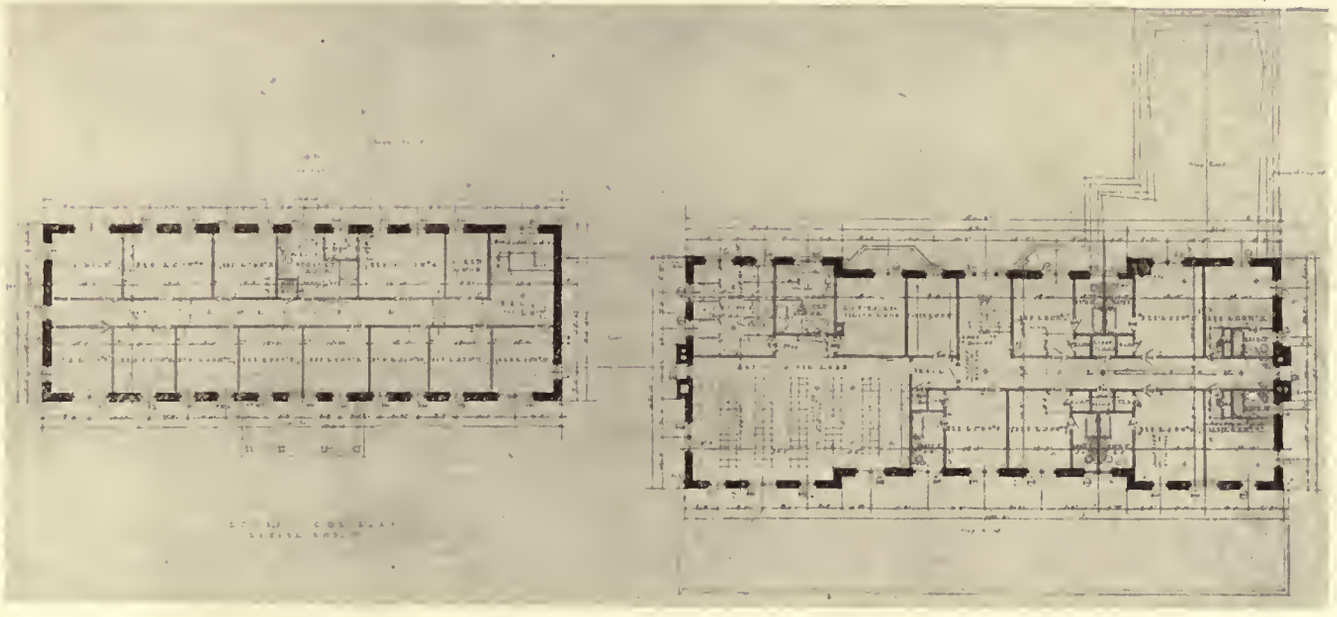






PLANS, GARDEN CITY COUNTRY CLUB, NASSAU BOULEVARD, LONG ISLAND. Morrell Smith, Architect.

320



Magaziner & Eberhard, Architects (formerly Magaziner & Potter).

PHILMONT COUNTRY CLUB, PHILADELPHIA, PA.

LOCKER-HOUSE.

THE CLUB-HOUSE.

Magaziner & Eberhard, Architects (formerly Magaziner & Potter).

PHILMONT COUNTRY CLUB, PHILADELPHIA, PA.

HALL.

DINING–ROOM.

Magaziner & Eberhard, Architects (formerly Magaziner & Potter).

PHILMONT COUNTRY CLUB, PHILADELPHIA, PA.

HOUSE, E. T. HARTMAN, LEXINGTON, MASS.

Wm. Roger Greeley, Architect (Kilham & Hopkins).

220

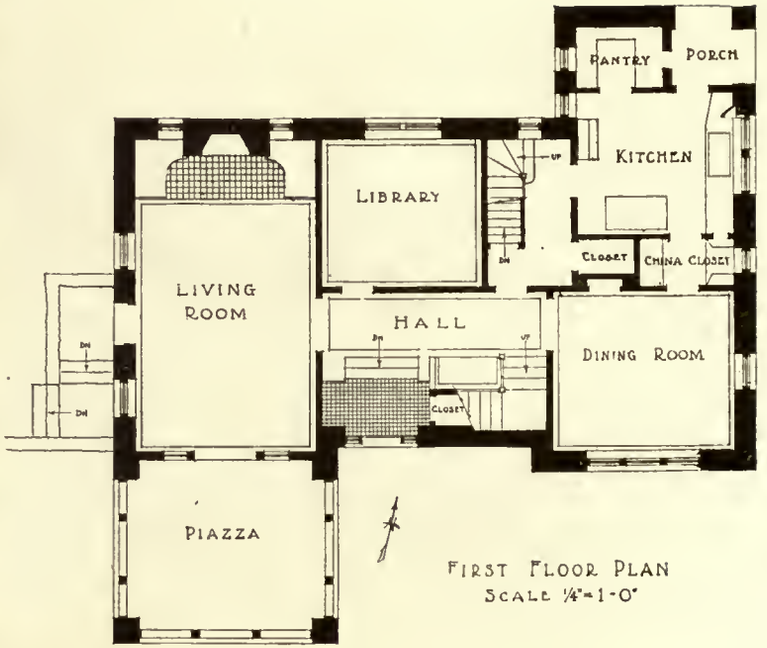
LIVING–ROOM.

HALL.

Wm. Roger Greeley, Architect (Kilham & Hopkins).

HOUSE, E. T. HARTMAN, LEXINGTON, MASS.

ENTRANCE DOORWAY.



PLANS. Wm. Roger Greeley, Architect (Kilham & Hopkins).

HOUSE E. T. HARTMAN, LEXINGTON, MASS.

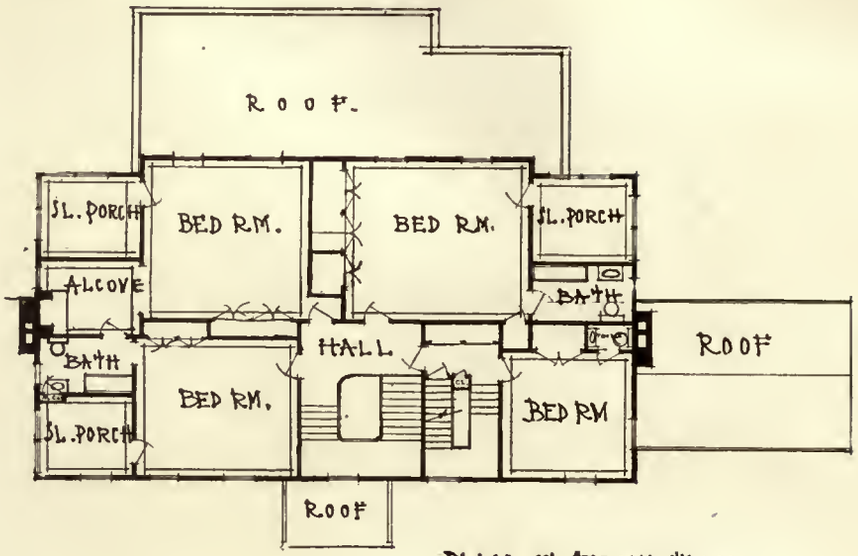
HOUSE.

HALL.

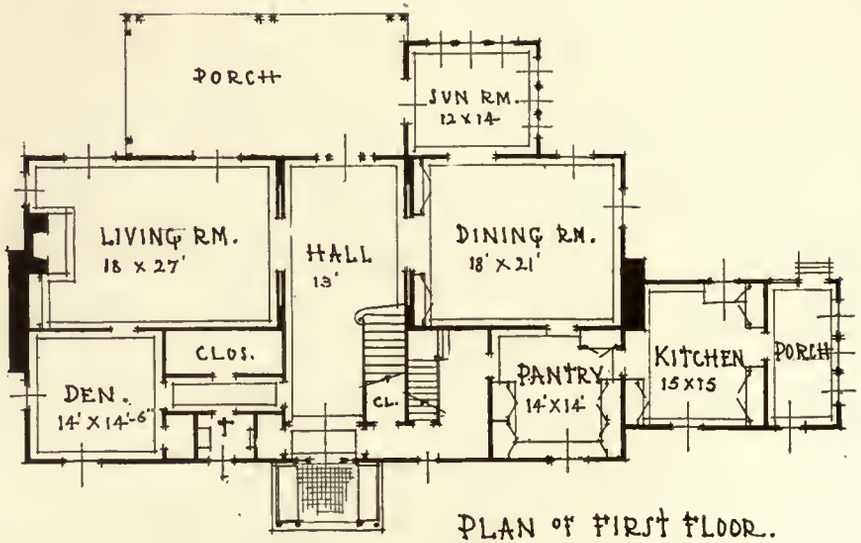
Barber & McMurry, Architects.

HOUSE, CECIL H. BAKER, KNOXVILLE, TENN.

FRONT ENTRANCE, HOUSE, CECIL H. BAKER, KNOXVILLE, TENN.

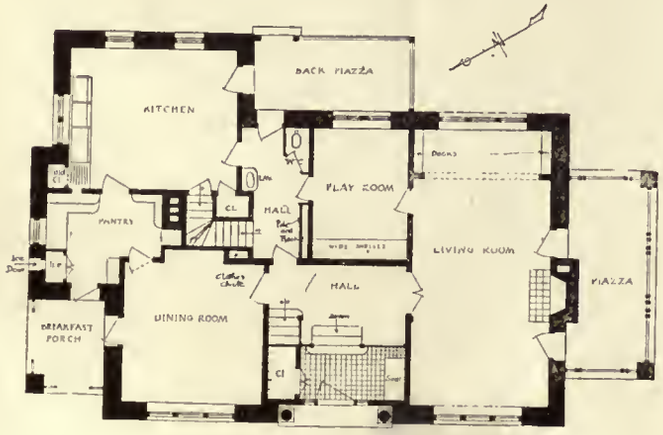


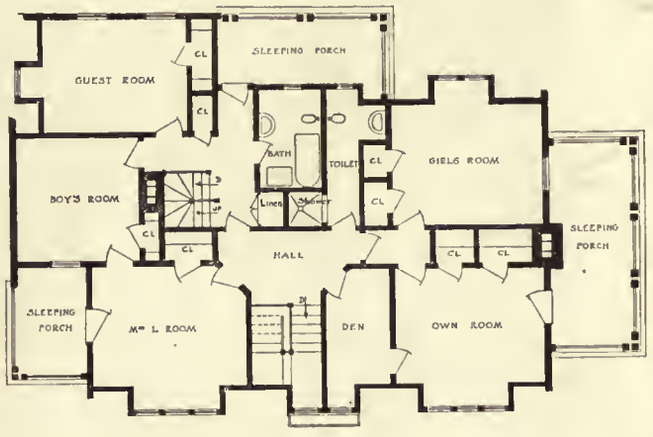
PLAN OF SECOND FLOOR.



PLAN OF FIRST FLOOR.

Barber & McMurry, Architects.





HOUSE AND PLANS.

HOUSE AT LAWRENCE, MASS.

Wm. Roger Greeley, Architect (Kilham & Hopkins).

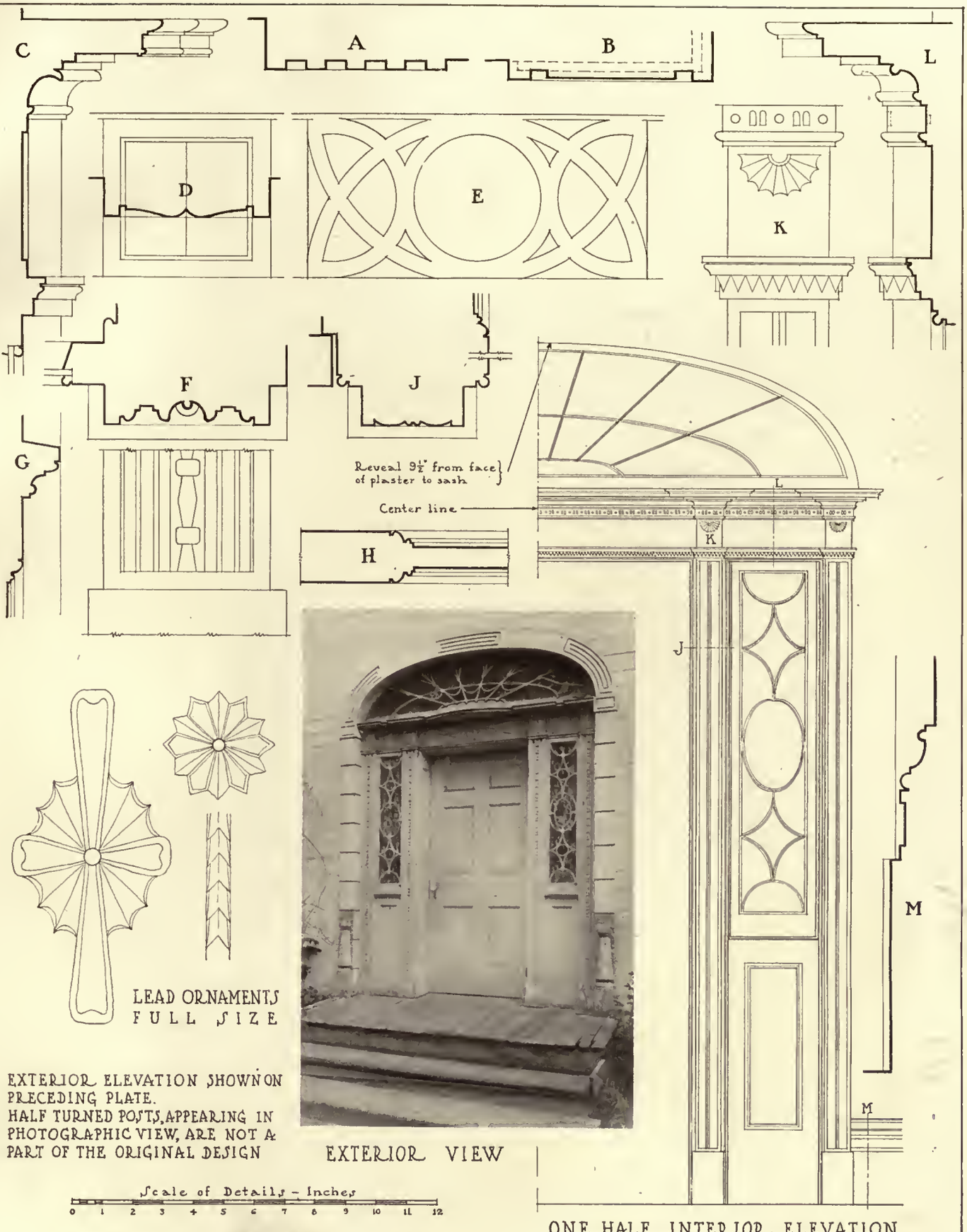
ENTRANCE DOORWAY.

HALL.

Wm. Roger Greeley, Architect (Kilham & Hop'kins).

HOUSE AT LAWRENCE, MASS.

720 13



LEAD ORNAMENTS
FULL SIZE

EXTERIOR VIEW

EXTERIOR ELEVATION SHOWN ON PRECEDING PLATE.
HALF TURNED POSTS, APPEARING IN PHOTOGRAPHIC VIEW, ARE NOT A PART OF THE ORIGINAL DESIGN

Scale of Details - Inches
0 1 2 3 4 5 6 7 8 9 10 11 12

ONE HALF INTERIOR ELEVATION
Scale 0 1 2 3 Feet

DOORWAY
MILLER HOUSE AT LUDLOWVILLE

MEASURED AND DRAWN BY Carl C. Tallman 1918

DOORWAY

MILLER HOUSE AT LUDLOWVILLE

SCALE 0 1 2 3 FEET

MEASURED AND DRAWN BY Carl C. Tallman 1918

DOORWAY BABER HOUSE SKANEATELES, N. Y.

ELEVATION – SCALE 0 1' 2' 3' 4'

DETAILS – 0 1 2 3 INCHES

MEASURED AND DRAWN BY
Carl C. Tallman 1918

From a photograph by J. B. Carrington.

HIGH BRIDGE, NEW YORK, BUILT IN 1840 TO CARRY THE CROTON AQUEDUCT ACROSS THE HARLEM RIVER INTO THE CITY.

There is talk of taking this bridge down to make more room for navigation. Its 13 granite arches, 116 feet high, have a rare beauty and old-time dignity in these modern days of steel. The newer Washington Bridge beyond is a notable engineering achievement. The length of its graceful steel arches are exceeded by only a few similar structures.

Reflections of an Architectural Draughtsman

By Talbot F. Hamlin

III

THE POSSIBILITIES OF A DRAUGHTSMAN'S UNION

CONTEMPORARY criticism of many recent events reveals an innate hostility in the middle-class mind toward most of the aims for which labor is working. There is often even a prejudice against mere industrial organization. This prejudice against organization is unfortunately shared by a surprising number of professional men. To be sure there are the Bar Association, Academies of Medicine, the American Institute of Architects, numerous engineering societies and the like; but these only rarely function as industrial organizations. Their business is usually of a higher sort, for the professional mind is often filled with a sort of awed veneration of the nobility of its own profession, and professional associations offer an unlimited opportunity for the expression of this veneration and for the preservation and increase of the profession's hieratic dignity.

This prejudice has, in the architectural profession at least, colored the thinking not only of the architect employer, but often of the employee as well. Until recently the personal element in office relationships was so strong, and the industrial element so weak, that the profession thought as a single entity. This personal feeling and the community of interest and similarity of outlook it aroused within the profession are two of the main reasons that the American Institute of Architects is one of the most, if not the most, wide-awake and advanced of all professional societies. Its view-point is more the view-point of the whole profession, employer and employee alike, than that of a mere employing class, as is often the case; and this breadth of attitude has colored and enlivened all its activities, and kept it sensitive not only to its own responsibilities but to the entire social and industrial tendency of the times. Its organ, the *Journal*, has thus become one of the greatest factors in the social education of the members of the profession.

Indeed, the attitude of the American Institute has become by reason of all this more advanced and radical than that of most of the individual architects who are its members. The financial and personal interests of many architects are too closely implicated, both directly and indirectly, with those of the wealth-owning classes for it to be otherwise. And this coloring of the architect's attitude toward contemporary life by the attitude of the client class—a coloring inevitably conservative and Tory—has communicated itself to its employees for exactly the same reasons that have made the Institute so advanced. It is a queer sequence of events.

Lately, however, things have begun to change. Many facts have combined to produce even in the ranks of the professions that same intensifying of industrial consciousness that has characterized the rest of the world—a development which is the first step toward realization of the much-maligned "class consciousness." This change is producing much questioning among professional employees as to their status and their expectations. Such questioning inevitably leads to the consideration of organization, and the formation of a draughtsman's union.

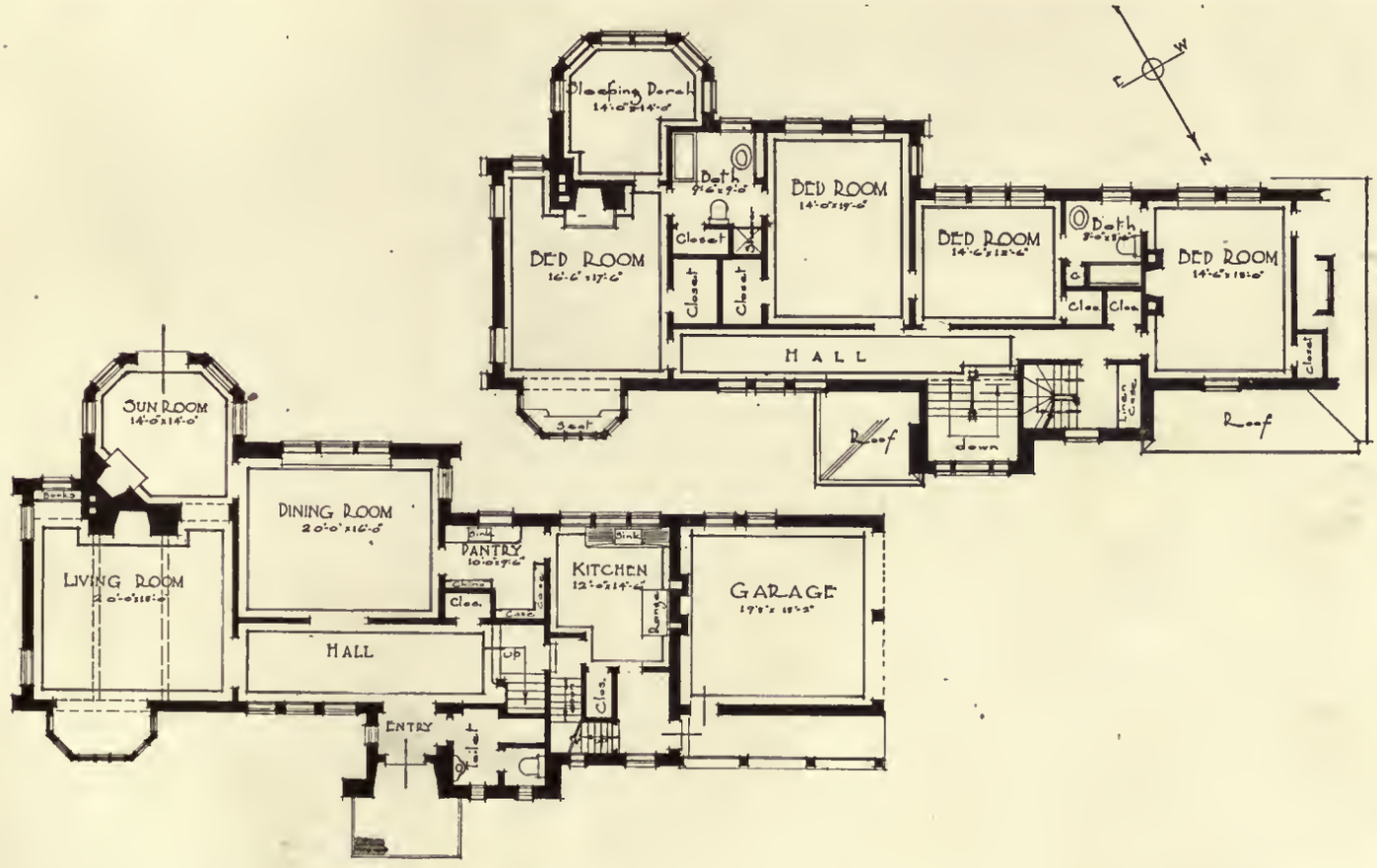
There are many, both architects and draughtsmen, who feel that a draughtsman's union is not only impractical, but even objectionable. They are afraid of the idea. They fear that it will limit individual initiative, smother individual effort, and reduce the quality of individual achievement. Moreover, some draughtsmen are afraid that unionization may entail a certain loss of prestige. To them it reeks of the shop or the subway ditch, it is an idea begrimed with factory smoke. There is more than snobbishness in this fear. Professional prestige is a very valuable possession, and the sense of it may lead easily to unjust discriminations, unless it is accompanied by a live and sympathetic imagination.

Both of these fears, however, are not final or conclusive reasons for abandoning the idea of a union. The fear of the loss of individuality is not well grounded. In fact, the whole purpose of industrial organization is the protection of the individual workers. Surely one will find at least as much individual initiative, ambition, and ability among trades well organized, as in the employees of an unorganized sweat-shop! The whole experience of industry seems to point out that the effect of organization is the increase and reinforcement and not the diminution of individual worth.

Similarly the fear of the loss of prestige entailed in organization is the result of a misconception. The carbon in factory smoke and pencil dust is much the same; and the old days when a great chasm existed between manual workers and brain workers have passed. The British Labor Party, in its complete consolidation of the aims of both, led the way; our own incipient labor parties are following suit. Labor has a way of vindicating its own dignity that far transcends and shames any narrow professional snobbishness. Nor are precedents lacking. Even the teachers have their union—a very flourishing organization—and the prestige of teaching has not suffered thereby, but increased.

Other objectors to the idea of a draughtsman's union see nothing for it to accomplish. They see no reason for injecting such strange new ideas, so pregnant with awful connotations of class consciousness and revolt, into the beatific status of architecture. Alas, the beatific status of architecture is a dying myth, and an American architectural magazine has been featuring the obsequies. And the strange new ideas grow more widely known continually; many of them the post-war committee of the American Institute seems not only to recognize, but to welcome! The profession must move as the times advance.

There is a great deal that a draughtsman's union could accomplish. Its benefits would not be mere one-sided benefits to the employee, but I believe would extend throughout the profession. First of all, it would furnish the draughtsmen a common meeting-place more useful and enjoyable than any social club. The fact that men from different offices would be working together for the common good would produce an enthusiasm and comradeship immensely stimulating in itself, for nothing could produce such richness of relationship except the incentive of co-operation. Such enthusiastic comradeship would result in a continuous and free interchange of ideas between men from all kinds of offices, big and little; an interchange which could not help



HOUSE AND PLANS, S. J. THOMPSON, GLENDALE, O. G. C. Burroughs, Architect.

broadening the draughtsman's thinking and thereby the quality of his work.

Moreover, the union would serve as a place for exchanging not only artistic experiences and ideals but economic experiences and aspirations as well. This is an exchange that is sorely needed, and it is the direct and special field of union activity. There is no standard of wages in the profession at present; they are paid on any and every basis. Economic chaos under the present system is inevitable. Some offices pay *pro rata* for overtime, some pay time-and-a-half, or even double-time; some pay no overtime at all. Certain offices pay the draughtsman for time lost in sickness, others pay half time, some pay nothing at all; again the industrial touch. A few offices are very strict in the matter of hours, even to the extent of the use of time-clocks or timekeepers; others leave the matter entirely to the honor of the employee. Some offices pay as high salaries as they can afford; some as low. Nor is a man's work the measure of his wage. Certain offices capitalize their atmosphere, their pleasant cordiality, not realizing that holiday parties and Christmas doles do not go far toward meeting the bills which the butcher and the baker and the candlestick-maker periodically present. Some of the very best offices seem to consider that their mere reputation brings to each of their draughtsmen a prestige which can be reckoned at so much a week, and the amount deducted from the salary a man's real work is worth. This is a system particularly unsound. To be sure, there is a real prestige in working for certain offices whose high standards make employment education as well. But to base the entire wage scale on this assumption is absurd, for such training is only temporary, and the cost of living, alas, like the brook, goes on forever. Moreover, such a system puts a premium on the young unmarried student, or the wealthy dilettante, for whom wages are mere tobacco money. Neither of these types of employee are likely to remain with such a firm long, and the result to the office is a constant labor turnover which prevents the highest achievement. In addition, no such system can ever be just to draughtsmen as a class, for it is bound to lower the wage standard of the entire profession.

This economic chaos is not only not disapproved but seemingly often cultivated by the present-day architect. Each architect employer still retains the feeling that the wages he pays and the conditions he makes are his own business, and he resents any inquiry into them as unjustifiable interference. Some time ago the Architectural League of New York attempted to arrive at some notion of the average salaries of draughtsmen. This attempt met such united opposition, not only from employers but from draughtsmen as well, that it came to nothing. Now, however, the opposition of draughtsmen has died, or at least become much less strong; that of the employer still in large measure remains. The only way any conclusions with regard to the proper standards of wages can be obtained is through the draughtsmen themselves, working together in an organization.

To cast a ray of light into the darkness of this present economic chaos would be no small gain. But the draughtsman's union could do much more. By demanding a standard of minimum wages compatible with a draughtsman's experience, training, skill, and position, it would test at once the soundness of present methods of professional payment. If the offices could not afford to pay decent wages under the present schedule of charges, the American Institute could be forced to prepare new schedules, perhaps on an entirely new basis. The union would inevitably gain a certain publicity, and the right use of that would do more to educate the public in the cost of good design than any other agency I can think of. It would bring the whole profession to the bar of public opinion, and at one stroke break down the wall of aloofness which surrounds large portions of the profession—a thing which would be a most salutary experience, both for public opinion and for the architect.

And one more thing the union might accomplish, even more valuable to the profession at large. The union would inevitably join the great army of labor and work with it, through the American Federation of Labor. This would mean that a great body of men in the profession would become deeply immersed in the economic realities of contemporary life. They would learn the principles of sociology and the tenets of vital progress through their own experiences. They would be brought face to face with stark radicalism and stark reaction. Think what an education that would be! Think how fripperies and fashions would take their proper subordinate places, and the real nobility of the underlying aims of architecture brought out! The effects of it upon the architecture of the country in a few years might be revolutionary; at least, architecture could not help being placed on a surer, saner basis.

If, then, a union is desirable, how should it function, and how be related? As I see it, it would strive to keep itself free from that narrow interpretation of life merely in terms of hours and dollars that has limited the efficiency of the American Federation. While always acting as a protection for draughtsmen, while always working for their welfare, it should also concentrate on larger questions—all the questions of ethics and expediency which are to-day agitating the profession. It should see architecture in its true proportions, not as a hieratic and wonderful mystery, but as a means toward beauty and happiness. It should dedicate itself to the democratization of the profession in every way.

It should function chiefly at first in a merely advisory fashion, study its position carefully, and broaden its scope gradually. The particular means it would use are various. The system of "shop stewards" might be adapted, or some system of elected representatives to work with the employers for the advancement of the profession. Above all, the union must work in the closest harmony with the American Institute of Architects. If possible, it should be formed under its protecting ægis. It should be represented at all meetings and conventions of the Institute, and work with it in every way. Once a close harmony was established between the union and the American Federation of Labor on one side, and between the union and the American Institute of Architects on the other, the danger of the purely selfish functioning of the union would be minimized. Moreover, such a harmony would be a stimulus to all its parts, and, who knows, might be the first step toward the realization of such a splendid ideal as that of a national building guild which Mr. Penty so attractively set forth in a recent *Journal* of the Institute.

Even if these bright hopes were disappointed, even if the consummation of a draughtsman's union left still unsatisfied some of the present criticisms of the profession, even if Utopia were not attained, such a development as that I have tried to express would strike deep at many of the evils that thwart the best achievements of the profession now. It would put architecture in touch with the world, and found it on realities and known facts. And to the draughtsman it would bring new self-confidence, welcome relief, new hope, and a new stimulus toward free and creative self-expression.

GARAGE WITH ATTACHED CONSERVATORY, PHILADELPHIA, PA. C. E. Schermerhorn, Architect.

GARAGE, ESTATE W. V. LAWRENCE, BRONXVILLE, N. Y. Bates & How, Architects.

A Short Talk on Building Construction

By David B. Emerson

IN my last article I discussed some points on construction which I believed might be of some value to the young superintendent. In this one I will take up at random a few items which may be of assistance to the young men who are beginning their work as superintendents. For the most part these may be only trifles, but successful building is made up largely of trifles, but in itself is by no means a trifle. Most of the matter which will be discussed, a capable and conscientious foreman would do without being told, but as all foremen are not capable and conscientious, and some contractors are not honest, the architect's superintendent must at times take the initiative and see that certain things are done which would otherwise be neglected. There are a great many "dos" and "don'ts" in building construction and some things which are right in warm weather are decidedly wrong in cold weather, and vice versa.

Another large factor to be taken into consideration in building operations where the builder and his foreman are perfectly honest and thoroughly well intentioned, is carelessness, which very often brings about poor results in building, with absolutely no wrong intentions, and the vigilance of the superintendent will do much to offset that. When concrete is being mixed by machine, it is a good plan for the superintendent to see if the mixer is properly set so that the hopper does not spill the cement back of the machine, thereby losing a part of the most valuable ingredient of the concrete. When concrete is mixed by hand, and right here let me say that if it is in any way possible to avoid hand mixing, always do it, as no hand-mixed concrete is quite the equal of machine mixed; be very careful to see that the water is not applied with such force as to wash out the cement, leaving a very lean mixture, mostly sand and stone. During very hot spells in the summer, when concrete is being placed, the sand and stone piles should be sheltered from the heat of the sun if possible, and the stone should be thoroughly drenched with water before using, to prevent too rapid setting of the cement, due to the heat. Fresh concrete must be kept dampened for several days after placing, to prevent cracking, by too rapid setting. When brick are being laid in cement mortar, in hot weather, be very careful to see that only a small quantity of mortar is mixed up at a time, only about enough to last about half an hour, as cement takes its initial set in about thirty minutes, and in hot weather a little quicker, and retempered mortar is of little or no value. When circumstances render it necessary to place concrete in cold weather, and very often it must be done, great care must be taken to prevent freezing. Sand and broken stone should be thoroughly dried and kept warm by imbedding sheet steel cylinders in the bottom of the sand and stone piles and keeping wood fires burning in them. Special precaution should be taken to avoid the use of materials covered with ice crystals or containing frost. The water should be heated before using, and a quantity of salt added to it. After concrete has been placed, it should be ordered to be protected from freezing, as much as is possible, packing over footings and around walls and piers with stable manure, tan bark or hay, which will keep out the frost very successfully in most cases.

Brick should always be wet before laying, except in freezing weather, or when there is a liability of the work freezing within a week after it is laid up. But brick should not be wet so much that they will run out of place when laid in mortar. In winter if the brick have been wet, or are coated with ice or snow, they should be thoroughly dried out and warmed before being laid, in the same manner as described for sand and broken stone. Mortar for laying up brick work in freezing weather should be mixed with warm water containing salt; also a good method is to mix in a small quantity of freshly slaked lime paste with the cement mortar; this will keep the mortar warm until the cement has obtained its initial set. Fire brick, when used for lining boiler flues or furnaces, should never be wet before laying, as wetting swells the brick, and if they are exposed to heat before they are thoroughly dry, they are liable to be seriously injured by the straw in them. The fire clay for laying up fire brick should be mixed about as soft as a thick soup, and the brick should be dipped into the mortar, and then laid in place, and hammered down so as to get the thinnest possible joint.

In mill construction or wherever heavy wood girders have to be built into brick work, or where the ends of roof trusses rest on the walls, brick must be laid away from the timber to give a circulation of air around it, to prevent dry rot. A very good way to accomplish this is to have the carpenter tack a piece of seven-eighths board on either side of the timber, so fastened that it may be removed after the brick work has been laid. Then after the brick work is laid up and set, pull the boards out and a space nearly an inch wide will be left on either side of the timber. This costs next to nothing, as there is always an abundance of short pieces of scrap lumber on the job, and this may be used advantageously for this purpose. Where steel beam girders are used to support brick walls, always have the girder shoved up in the centre of the span, until the mortar is well set up, as the extra load caused by the wet masonry will cause deflection in the beams, but after the mortar has set the masonry arches itself and there is no longer any danger of deflection. Very often from one cause or another, especially in rebuilding after a fire, it is necessary to re-use old brick. Where this is done, and the walls are to be plastered directly on the brick work, the superintendent should be very careful to note if there are any smoked brick in the face of the wall. If such is the case he must order the smoked brick painted with R. I. W. or some of the various compounds of a similar nature, for if this is not done the smoked brick will stain through the plaster. If plastering is to be done with lime and hair, the superintendent should see that the lime has been thoroughly stalled and stacked until it has become thoroughly cooled before mixing with the hair, as mixing hot lime with hair burns up the hair, and its binding quality is entirely lost, and the plaster is liable to fall at any time. Where roof trusses are exposed, the lower chords should be cambered; this will offset the bowed-down appearance of a perfectly level chord, and will also take up any deflection which may occur under loading. Cambering should be done by cutting the struts a little short, and drawing the chord up by means of the vertical rods. In mill or slow burning construction, where heavy plank floors are used, always insist that all flooring be kept a half-inch away from all walls, because in case of the floors being

GARAGE, JOHN CHANDLER MOORE, OYSTER BAY, LONG ISLAND — Chas. I. Berg, Architect.

GARAGE, G. A. SCHIEREN, GREAT NECK, LONG ISLAND — Aymar Embury II., Architect.

drenched with water from any cause, the swelling of the plank might crack the walls. When plank floors are laid do not allow them to be spiked to the beams until the roof is on and made water-tight, as a heavy rain might swell the plank and cause a serious warping of the floors. Before allowing any interior trim to be put up or finished floors to be laid the superintendent should see that all plastering has thoroughly dried out, otherwise the kiln-dried lumber will absorb the moisture like a sponge, and warping and twisting will result, and the woodwork will be in an unfit condition for finishing.

When interior woodwork is to be varnished, before any work is done see that the building is thoroughly dried out and that it is not too cold; a temperature of from 70 to 75 degrees is the best for varnishing. If it is too hot when the varnish is applied it may blister. Dampness in the building after varnishing may cause blooming or going foggy. Before applying a second or third coat of varnish be sure that the under coats are thoroughly dry, otherwise the varnish may become brittle, crack or deaden. In case the varnish should "bloom" or "go foggy," the bloom may be removed by washing very lightly with kerosene, and rubbing it gently with a soft woollen cloth. Varnish should never be thinned except when it has become heavy and will not flow, and then it should only be done with pure spirits of turpentine. Never permit the use of oil, Japan, or liquid dryers. The varnish and turpentine should be as near the same temperature as possible, before mixing, and after being mixed should be allowed to stand for a while, to insure a perfect amalgamation.

These are just a few of the many points which are continually occurring in building operations, which the superintendent must decide.

There is one little piece of advice which I would give to the young men starting out as superintendents, and that is, never be too proud to take advice and information from the mechanics and workmen on the buildings. They may not have a great many ideas, but some of the ideas which they have are very good, and the writer has profited not a little from what he has been told by them.

The Aftermath of the Housing Dilemma

By William E. Groben

WHAT is to become of those numerous settlements, the "Industrial Villages" and "Garden Cities," constructed during the war by the United States Shipping Board, Emergency Fleet Corporation, the Bureau of Industrial Housing and Transportation, and the Department of Labor? They are better planned communities than we ever dreamed of having before the war. How are we going to keep them so? Are they to be permitted to revert to the old haphazard standards of our older cities and towns?

Are not the reasons advanced in Congress for spending millions on housing industrial workers just as pertinent now as at the time of the war? If more and better housing was needed then to increase production, to make labor more contented and more efficient, and to stabilize both industry and labor, thereby reducing the labor-turnover and strikes, is it not now needed more than ever to accomplish these same purposes?

If the war was fought for the rights of humanity, is not the inalienable right to live in a sanitary home, where health and contentment prevail, one of the greatest of these? Upon it must rest the foundation of that social structure which is to safeguard our democracy for posterity.

Is the organization so carefully built up during the war for the purpose of erecting modern sanitary homes on scientific principles to be disbanded, when, with a greater and ever-increasing shortage of homes, it is more needed than ever? Are we going to tolerate a reversion to former conditions? Are we going to permit the antiquated methods to prevail whereby home developments were planned and constructed for the profit of the land speculator and the financier?

If our national housing organization is to be discarded, how are the necessary homes to be secured to meet their present and ever-increasing scarcity?

Under the most competent direction these government agencies, created during the stress of war, have achieved results, in so far as was within their limited authority, far beyond the expectations of the most optimistic, by the employment of the most advanced principles of scientific town planning and the adoption of certain flexible standards for both the plan and construction of the houses themselves.

What sort of procedure is to be established for future communities? Is the federal government to fall behind in its duties toward its citizens by relinquishing all its responsibilities in disposing of these housing developments at the earliest possible moment? To wit, clipped from the daily press:

UNITED STATES SHIPPING BOARD

EMERGENCY FLEET CORPORATION

ANNOUNCE THE SALE BY BID OF

ST. HELENA

A HOUSING DEVELOPMENT LOCATED IN BALTIMORE COUNTY, MARYLAND

Is this great humanitarian movement to lose the dignity of its purpose and become the plaything of politics—to be cast aside at the whim of partisan leaders? With the new interpretation of democracy before the world, government has been assuming a greater and increased responsibility for the general health and well-being of its citizens. Its duties have been extended to include not only education, etc., but the providing of such public utilities as roads, water, sewage disposal, the removal of domestic ashes and garbage as well as dirt from the streets, postal, telephone, telegraph, and transportation service, and is still growing.

With a greater sense of democracy, a more socialistic condition of co-operative action has developed for the good of the citizens *en masse*, as distinguished from a state of government for the selfish protection of the few.

It is apparent, therefore, that the first duty of our government is to provide homes for its industrial workers through some centralized authority. This can be national, State, or municipal, but should be delegated with power to determine and control the standards of housing, and have jurisdiction over their management.

What is needed is a national organization capable of

TWO GARAGES, THE ROSE ESTATE, PHILADELPHIA. Simon & Bassett, Architects.

dealing with the problem in accordance with practical and scientific principles, to furnish initiative, ideas and expert advice, to dispense loans from a national housing fund supported by bond issues, and to control standards through that power. It is to the government, either federal or State, that we must look for the necessary supply of capital for any national housing programme in time of peace, just as was necessary in time of war; because from no other source can a sufficiently large supply of capital be obtained at a sufficiently low rate of interest extended over a long period of time.

The federal and State governments will concern themselves with the furnishing of capital or its equivalent, credit, and consequent making of standards, together with their control or enforcement, through a system of local administrative boards.

The actual construction may be undertaken either by municipalities, or, as at present, by building and loan associations, housing societies, or private enterprise.

The work of construction on the part of the federal government, a practice common in certain European countries, would cease, and would become the duty of the municipality, which would be in closer touch with the local work. The successful outcome of any government housing policy will depend upon the intelligence with which it is administered by these regional boards.

This method of procedure would avoid interference with private enterprise and initiative. The federal government could thus avail itself of already existing agencies for securing the actual construction. Under this sort of a housing programme the contracting builder will obtain more construction than formerly, in proportion to the increased capital invested by the federal government throughout the various States.

The scarcity of private capital, the scarcity and high cost of both labor and materials, tend to prevent home building of any magnitude at the present time.

Furthermore, the increase in rental values has advanced out of all proportion to the increase of the wages of working men; and yet not sufficiently to show a profit for the speculative builder; so that the introduction of national funds for housing purposes would be a boon to legitimate private enterprise. Also, any standards determined upon by the government, for its industrial housing, must apply with equal force to housing controlled by private enterprise. These standards require abundance of light and air, hygienic and sanitary homes and surroundings, suitable amenities of life, with proper environment beyond the home itself to be found in the community centres.

What conclusion do we draw from this? The present situation of the housing movement, uncertain as it is, and hanging fire before the architectural and building public, resolves itself down to the simple question of survival. These numerous industrial villages, which everywhere form the vanguard of the army of munition and ship-building plants throughout the industrial sections of our Middle Atlantic States, must either be retained and operated by the government as villages and communities, or revert back to private ownership and exploitation. If some action is not soon taken, these villages, erected at vast expense of labor and material, many of which are still unfinished and only partly occupied, will soon deteriorate and become nothing but the embodiment of all those deplorable conditions, the evil effects of which the present era of social democracy is striving to avoid for our social and economic future.

Announcements

The University of Virginia has established a school of art, architecture, and music, as the result of a gift of $155,000 for that purpose from an alumnus, Mr. Paul G. McIntire, of New York. Professional instruction in architecture will begin this fall. While in one sense new, this school will, however, be the revival of the first school of fine arts in America, which was included by Jefferson in the original organization of the university. The school will have the unrivalled background of the old classic group of buildings on the lawn, and its harmonious modern extensions by Stanford White and others.

The Lunken Window Company, of Cincinnati, announces that Mr. Van Rensselaer Lansingh, formerly general manager of the Holophane Company, has been elected president of their organization.

Williams and Mahnken, architects, consisting of Edgar I. Williams and Walter R. Mahnken, wish to announce the removal of their office to 8 West 33d Street, New York City (Telephone, Madison Square 852), and desire catalogues, samples, and prices on all materials.

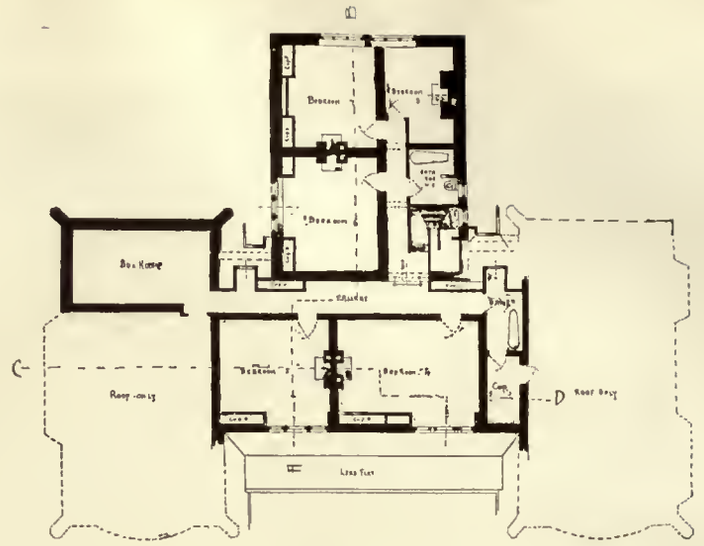
C. E. Schermerhorn, architect, member American Institute of Architects, 430 Walnut Street, Philadelphia, Pa., announces resumption of practice, having completed his services with Military Intelligence Section, Plant Protection Division, General Staff Corps, United States Army.

Mr. Joseph Della Valle and Mr. Toby Vece, architects, announce the opening of their offices at 865 Chapel Street, New Haven, Conn. Manufacturers' catalogues and samples are requested.

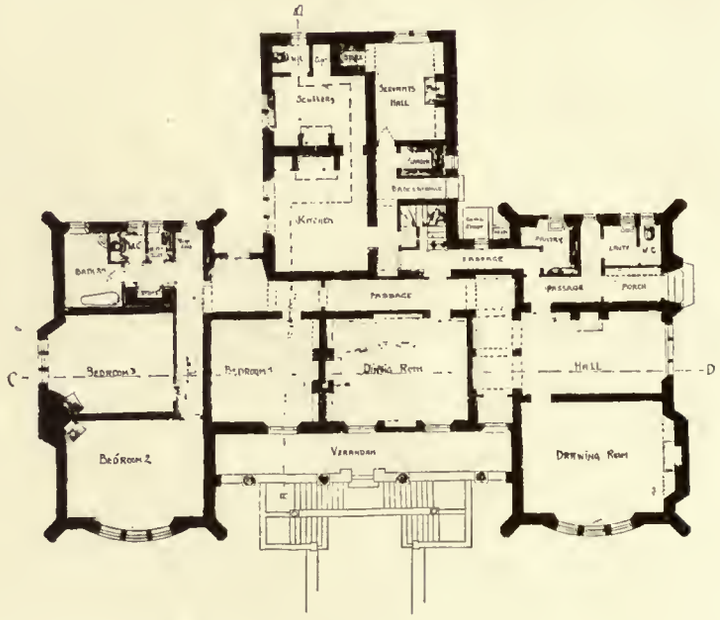
Determining the Strength of Wood by Its Density

A COMPARATIVELY simple method of estimating the strength properties of timber from the density, or specific gravity, is set forth in Bulletin 676 of the Department of Agriculture, "The Relation of the Shrinkage and Strength Properties of Wood to Its Specific Gravity," which has just been issued. By the analysis of over two hundred thousand tests on wood of many species, the Forest Products Laboratory of the Forest Service has definitely established the relations between the specific gravity of wood and its strength properties. Equations for these relations have been worked out and have been reduced to such simple form that they may be solved by arithmetic and without the use of higher mathematics.

In selecting timber for any given purpose, in comparing various species of wood, in estimating the properties of any particular wood, the equations should be found useful. To supplement the equations in determining in what way a species is exceptional and to what use it is best adapted there is a tabulation showing the variation from the average equation of each property of the various species tested. This variation from the average equation is often what determines the usefulness of a species for a special purpose.



First Floor Plan



Ground Plan.

"HELLENS," DARTMOOR, ISLINGTON, S. DEVON, ENGLAND

T. H. Lyon, Architect.

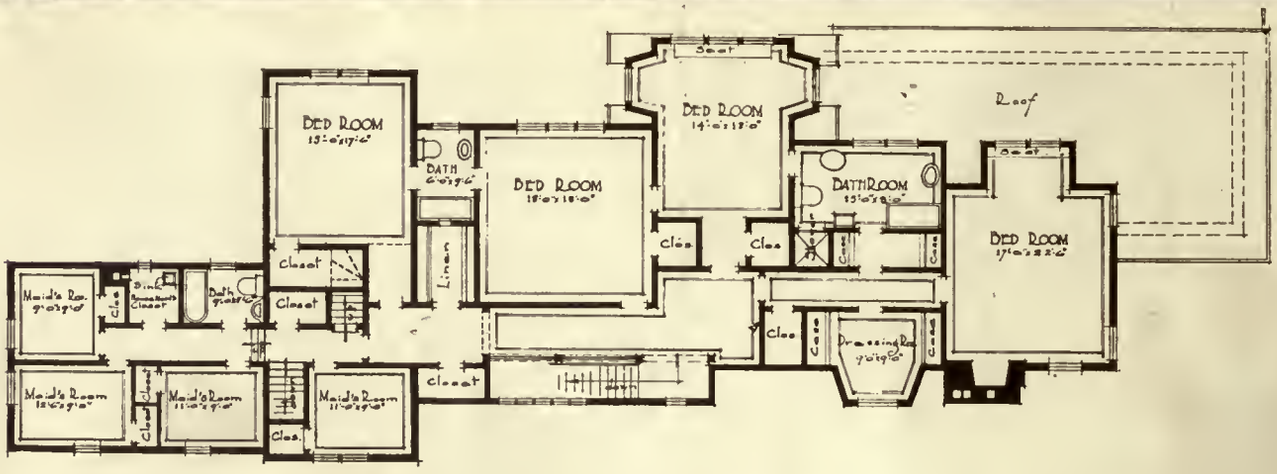
Atlantic storms sweep across Dartmoor with the force of a miniature hurricane. Massive granite boulders and sturdy oak-trees give a somewhat heavy character to this moorland scenery; therefore the most suitable type of architecture will combine breadth and simplicity with very marked solidity.

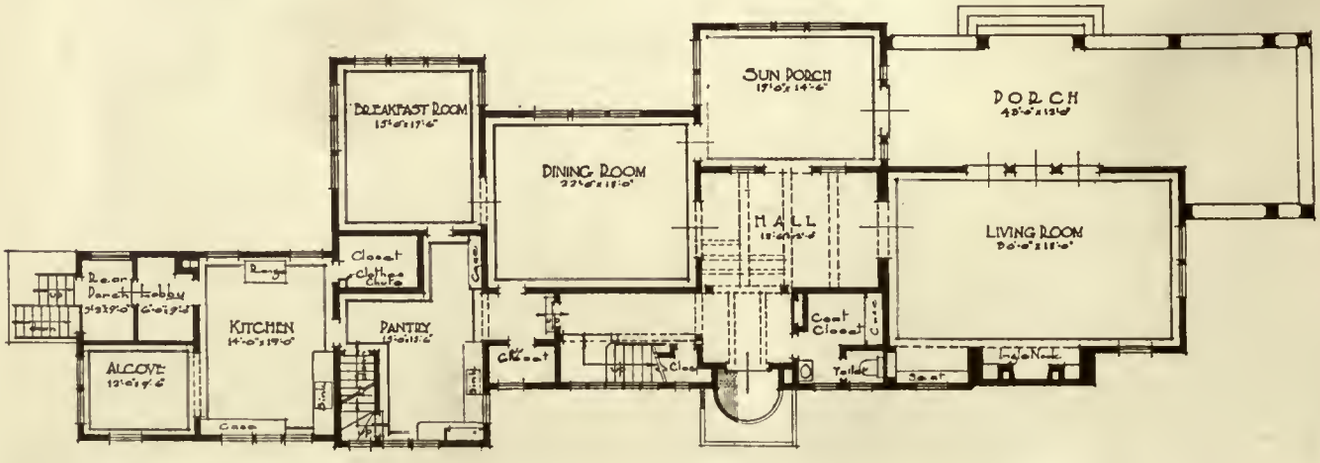
In the house illustrated the angle buttresses plant the house with its feet firmly on the ground. The large roof area with its deep eaves forms, as it were, a broad-rimmed hat for protection against the weather.

There is a drop of thirty feet from the entrance-door to the road below.

Two broad terraces were formed on this slope from the material excavated in preparing a level space for the vast cellarage under the building. The main floor is raised some twelve feet above the garden in front of the house, which is approached by a double flight of stairs from the central veranda.

The cost of the house and the lodge, which combines a gardener's cottage with stables and a motor garage, was thirty thousand dollars.





HOUSE, E. H. MURDOCK, CINCINNATI, O.

G. C. Burroughs, Architect.

MAIN HALL TOWARD SUN-ROOM.

DINING-ROOM.

HOUSE, E. H. MURDOCK, CINCINNATI, O.

G. C. Burroughs, Architect.

Ways of Financing Home-Building

Various Cities Have Worked Out Practical Methods of Aiding Construction Projects

IN the Nation-Wide Own Your Own Home campaign, conducted in co-operation with the U. S. Homes Registration Service, Department of Labor, the problem of how best to finance building operations has been solved somewhat differently by various cities according to their special needs.

A few weeks before the armistice was signed the Columbia Investment & Mortgage Co. was organized in Seattle, Wash., to aid the small investor and to make possible the proper housing of workers engaged in war industries. Its scope included the buying, leasing, and acquiring of real estate and personal property, the erection of dwellings and other buildings, and the making of improvements of any kind on its properties. Its objects as announced are comprehensive, and it obtained power "to loan money on real estate secured by first or later mortgages, leaseholds, sale, or purchase contracts, construction contracts or other interests in land and buildings, or other securities, and to negotiate, buy, sell, or hypothecate all such mortgages or evidences of indebtedness or interest, whether by note, bond, debenture, or other form, and whether as a whole or individual fractional units." The organization of a company authorized to deal in second mortgages and in real estate contracts where the lien is a secondary lien was intended to aid housebuilders who had no market for real estate contracts.

The corporation is enabled to advance to owners of vacant lots the difference between the cost of the house and the amount of money that could be loaned by insurance companies or other loaning agencies. The capital stock is $200,000, divided into 2,000 shares of $100 each. The company was organized as a patriotic and civic duty, and arrangements were made with the Metropolitan Building Co. to manage the affairs of the new organization, which is represented by fifteen trustees.

St. Paul, Minn., worked out a plan for the organization of the Own Your Home Financing Corporation, the object of which is "to assist wage-earners to the ownership of their homes and to that end to advance to them not to exceed 80 per cent of the value of the property" on which a loan is made, such advances to be repaid in monthly or other instalments and to be secured either by mortgages, land contracts or obligations and evidences of indebtedness. The company may borrow upon notes, bonds, and debentures such sums of money as may be necessary for the carrying on of business. Provision is made for a loan committee consisting of the president, vice-president, and three members of the board of directors, appointed by the president. This committee must pass upon all applications for money, and, upon approval of an application, the form of security to be taken is determined. Provision is made for the appointment of a transfer agent and registrar of transfers.

South Bend, Ind., has outlined another plan through its projected Home and Investment Co. A committee of citizens, appointed to suggest a method of relief for the serious housing situation, reported in favor of a company to be organized under the Voluntary Association Act, the object being the "borrowing and loaning money, buying and selling promissory notes, bills of exchange accounts, choses in action, fees, and all other evidence of indebtedness, and buying, holding, owning, mortgaging, leasing, and selling real estate and personal property."

Provision is made for the buying and selling of stocks and bonds, directly or indirectly, on commission or otherwise to the same extent as an individual engaging in such business might do. The company can loan money to individuals, partnerships, and to incorporated societies to assist in the improvement of real estate. It has a capital stock of $500,000 divided into 10,000 shares of $50 each; 4,000 shares are common stock, and 6,000 preferred.

The company will be able to stimulate building on a scale which will be sufficient to cover the urgent needs of the time. The plan was proposed with a view to simplicity of method and with an idea of causing as little interference as possible with regular organized business, whether financial, construction, or real estate. The purpose has been to leave the proposed owners and builders of property free, within reasonable limits, in the design of the houses to be erected, and to advise usual methods of financing as largely as possible through the banks and other institutions. It is stipulated that homes to be constructed by this company shall be upon real estate owned by the organization, such real estate to be purchased at fair values or to be accepted at such value in exchange for common or preferred stock in the company. It is the desire of the organization to build houses in lots of approximately 20 and to borrow approximately 50 per cent of the total investment upon 6-per-cent first mortgage loans, such loans desirably to run for a period of five years with privilege of reducing at any semiannual interest-paying period.

While the company is prepared to build houses, the most important function of the proposed organization will be the financing of independent construction by individual citizens. Inasmuch as there is a large number of vacant lots scattered through portions of South Bend, the committee desires to encourage owners of these lots to take action in the line of immediate improvement.

Janesville, Wis., decided on the organization of the Janesville Housing Corporation, its three objects being—first, to provide attractive homes for the citizens of Janesville upon such terms as will enable them to live comfortably at moderate cost; second, to create a means by which manufacturing concerns can provide housing accommodations for employees; and, third, to encourage and foster building improvements of a character that will cause rapid and substantial growth of the city.

Subscriptions to the capital stock were made payable as follows: Twenty per cent upon organization, 40 per cent upon order of directors, at least 30 days later than first payment; 40 per cent at least 60 days later than first payment. The directors are empowered to employ a general manager and such other employees as may be necessary. The president also appoints the executive committee, finance committee, and various other necessary committees, the personnel of which include men specially fitted for the tasks assigned to them.

Niagara Falls, N. Y., found a serious shortage of dwellings at the close of the war. According to estimates, 10,000 houses will be needed within ten years. To meet present and future emergencies it empowered its Industrial Housing Committee to study conditions and make recommendations. The committee's report, which was adopted, recommended

the organization of a housing corporation and presented three methods of financing building: First, by a straight loan from a bank or individual secured by first mortgage, the corporation taking a second mortgage for the difference between the loan and the cost of the dwelling, the second mortgage to be paid in monthly instalments; second, a loan from a loan association secured by a first mortgage, payable in instalments, on which the company would take a second mortgage payable at the end of a term of years and maturing when the first mortgage is sufficiently reduced to absorb the second mortgage; third, a loan for the full value of the building, the borrower giving back a first mortgage for an amount which would render it marketable at once, this mortgage being payable at the end of a term of years, the balance of the loan being secured by a second mortgage, payable by monthly instalments.

Under any of these principles the corporation would take up the difference between the first mortgage and the cost of the dwelling. It was recommended that the capital stock of the corporation would be $250,000, all of which would be common stock, with a par value of $100 a share.

A plan that has been tested a number of years is that of the Billerica Garden Suburb (Inc.), of Massachusetts, incorporated in June, 1914, with a capital stock of $50,000. The scope of this company included the building of desirable homes at a moderate cost or rental, the purchase of real estate, the remodelling and repairing of dwellings, and the management of houses or other buildings. The 5,000 shares of common stock at $10 a share were issued in small blocks, provision being made for dividends at the rate of 5 per cent per annum, accumulative on all shares outstanding at the time. The property, affairs, and business of the corporation are managed by a board of directors.

New York Society of Architects

AT the annual installation of officers of the New York Society of Architects, there was a large gathering.

President James Riely Gordon, in a characteristically humorous vein, introduced the various speakers of the evening. These included Messrs. Ford H. Dow, of the Dow service, who took occasion to emphasize the necessity of co-operation between architects and the allied professions; the recent stress and suffering through which we have passed being largely due to lack of this.

Mr. Allen E. Beals, in a most interesting and instructive address, embracing as it did much statistical matter, predicted that prices would not reach their climax till the year 1922. The exodus of labor from this country partly explains this, there being nothing to take its place. Taking the various classes of building material item by item, Mr. Beals showed that the present production is only from 30 to 40 per cent of the demand. Next year, the speaker predicted, it would be about 60 per cent, etc., until normal conditions are reached. There would probably be three billion dollars worth of work done in the year 1922.

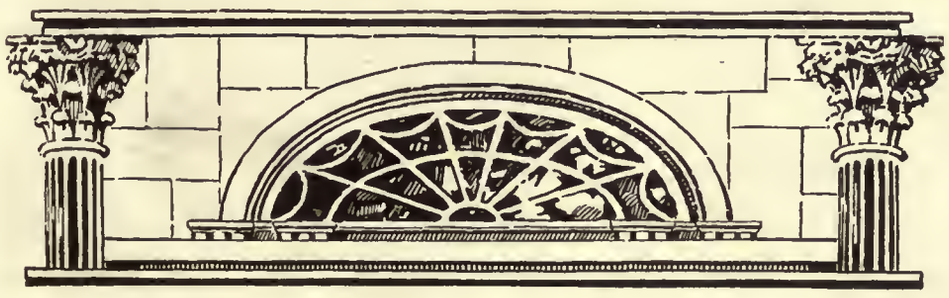
Mr. John De Hart, of the Board of Standards and Appeals, said this country is going to depend largely upon the education of other nations. Housing provision for 40,000 families has to be met, besides the needs of other countries.

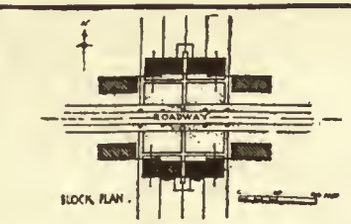
The society's second vice-president, Edward W. Loth, of Troy, said we must be prepared for a great boom in business. Mr. Loth gave an account of the formation of a new State Association of Architects in Utica. He also enlarged upon the importance of the architect developing the artistic side of his profession. He said that to be great in architecture a man must be an artist as well as a master of construction and man of business. The necessity of amending the Registration Law, to make it effective for the exclusion of unqualified practitioners, was also urged by Mr. Loth.

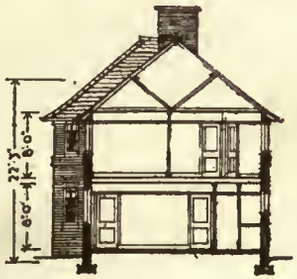
Institute Committee Assignments of the Illinois Chapter XIX

THE Institute Committee assignments for the years 1919 and 1920 of members of the Illinois Chapter are as follows:

Executive: Richard E. Schmidt.
Judiciary: Richard E. Schmidt.
Practice: Elmer C. Jensen, Chairman.
Contracts: F. E. Davidson, Richard E. Schmidt.
Public Works: Irving K. Pond.
Executive Council, Committee on Education: George C. Nimmons, three years.
Sub-Committee of General Committee of Education on Public Appreciation of the Arts: George C. Nimmons, Chairman, three years.
Competitions: J. C. Llewellyn.
Institute Publications and Public Information with Regional Sub-Committees on Public Information: F. E. Davidson, representing Illinois and Iowa.
Structural Service: John L. Hamilton, H. W. Tomlinson.
Historical Monuments and Scenic Beauty: Elmer C. Jensen.
Community Planning: D. H. Perkins.
Registration Laws: Richard E. Schmidt, Chairman.
Lincoln Highway: Elmer C. Jensen, Chairman.
School Building Measurements: D. H. Perkins.
Post War Committee: N. Max Dunning, Chairman.
Membership Committee: F. W. Perkins, Chairman; C. H. Hammond, Henry K. Holsman.
Franco-American Committee of Architects: Irving K. Pond.





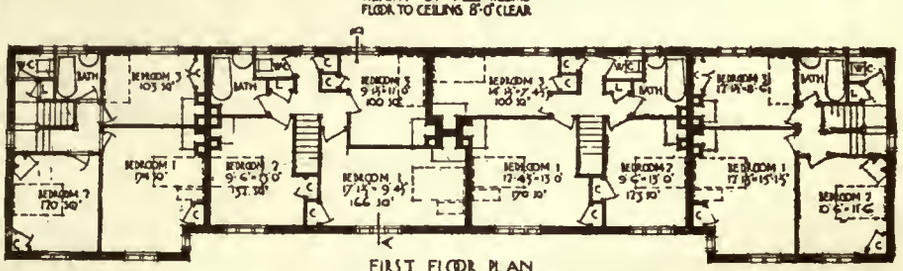


SECTION A-B

VIEW OF SOUTH FRONT

END ELEVATION

HEIGHT OF ALL ROOMS FLOOR TO CEILING 8'-0" CLEAR



FIRST FLOOR PLAN

END COTTAGE	AREA	CUBE
LIVING ROOM	186 10"	1488 C'
PARLOUR	120 "	960 "
SCULLERY	99 "	770 "
BEDROOM 1	174 "	1392 "
" II	120 "	960 "
" III	103 "	824 "
BATH ROOM	32 "	256 "

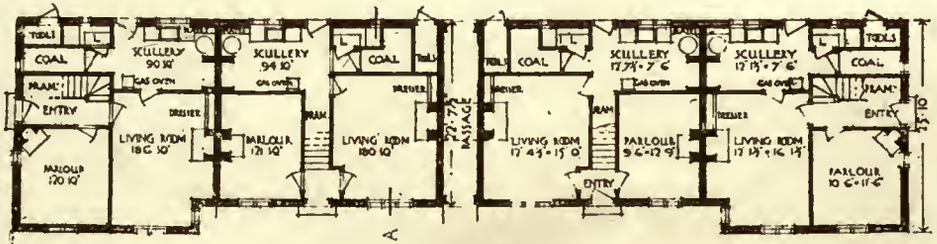
MIDDLE COTTAGE	AREA	CUBE
LIVING ROOM	180 10"	1440 C'
PARLOUR	121 "	968 "
SCULLERY	94 "	752 "
BEDROOM I	164 "	1312 "
" II	123 "	984 "
" III	105 "	800 "
BATH ROOM	40 "	320 "

MIDDLE COTTAGE — END COTTAGE

TOTAL CUBE 14008 CU. FT. COST @ 5d = £291-16-8

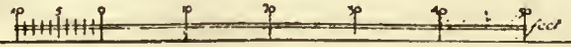
TOTAL CUBE 13604 CU. FT. COST @ 5d = £283-8-4

NORTH ELEVATION



GROUND FLOOR PLAN

SOUTH ELEVATION



LONDON "DAILY MAIL" IDEAL HOMES COMPETITION PRIZE DESIGN.

Evelyn Simmons and Leslie Glencross, Architects.

From a photograph by courtesy of Avery Library, Columbia University.

WINCHESTER CATHEDRAL, WINCHESTER, ENGLAND.

ARCHITECTVRE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XL SEPTEMBER, 1919 NO. 3

Winchester Cathedral

By the Reverend Canon John Vaughan, M.A.
Canon Residentiary of Winchester

Slab of Bishop Audeman.

FOR some time, during the great war, large numbers of American soldiers were stationed at Morn Hill Camp on the downs above Winchester. They rested there for a few days or weeks, before embarking at Southampton for the seat of war. It is estimated that not less than three-quarters of a million men of the United States army thus passed through Winchester. With that love of visiting places of historical interest which marks the alert and intelligent mind, the "boys"—as we called them—made the best use of the little spare time at their disposal. They loved to wander through the quaint and narrow streets of the ancient capital of England. They would walk down the meadows to the mediæval hospital of St. Cross, and perhaps take a crust of bread and a glass of "small" beer at the porter's lodge. Above all, they loved to visit the cathedral, with its glorious architecture and its history of a thousand years. They would come down from the camp on Morn Hill in "companies"—sometimes to the number of five or six thousand in a day—in order to wander through the aisles and transepts of the old cathedral and to inspect more closely the chief monuments of historical interest. It was often my privilege to "show them round," and never shall I forget their keen appreciation as I pointed out to them the treasures of the cathedral, or told them stories of King Canute and William Rufus, of William of Wykeham and Cardinal Beaufort, of Izaak Walton and Jane Austen, and other celebrities who lie buried there.

It was mostly our custom on these perambulations to enter the cathedral by the west door and, lingering for a few minutes beneath the great west window, with its kaleidoscope of mediæval glass, gathered together after the destruction wrought by Cromwell's soldiers, to survey the majestic proportions of the splendid edifice. If from the outside the appearance of the cathedral be somewhat disappointing, the interior fills one with awe and amazement. We felt, with the poet Wordsworth, that

> "They dreamt not of a perishable home
> Who thus could build."

The prospect, looking up the nave, is overwhelming. With the exception of St. Peter's at Rome, it is the longest nave in Europe. And not only the longest, but the most magnificent. As transformed from the Norman style to that of the Perpendicular by the genius of William of Wykeham, it is admitted to be the finest Gothic nave in existence. Beyond the nave the beautiful east window of Bishop Fox, with its attractive stained glass, sheds a mystic and mysterious light over the choir and sanctuary.

Making our way up the nave, the first stopping-place was always the chantry of William of Wykeham. The cathedral is specially rich in mediæval chantries. No less than seven may be seen. They are all chantries of bishops of Winchester, most of them statesmen-bishops, all of them bishops of national as well as diocesan distinction. Two of these chantries are situated in the nave and the rest in the retrochoir. The chantry of William of Wykeham is of special importance, inasmuch as Wykeham was the greatest of the bishops of Winchester. He played an important part in the affairs of state and was twice chancellor of the kingdom. As an architect he transformed the Norman nave into the Perpendicular style which we see to-day. His munificence to the diocese is still visible in a number of parish churches. Above all, he is remembered as the founder of Winchester College (1393), and therefore of public school education in England, and also as the founder of New College, Oxford. A visit to his splendid shrine or chantry will never be forgotten. The great bishop is represented in full canonicals as lying on his tomb, with three little monks praying at his feet; or, as William Cobbett in his *Rural Rides* expresses it, when, in 1812, he brought his son to see

The Norman Font.

The Choir Screen.

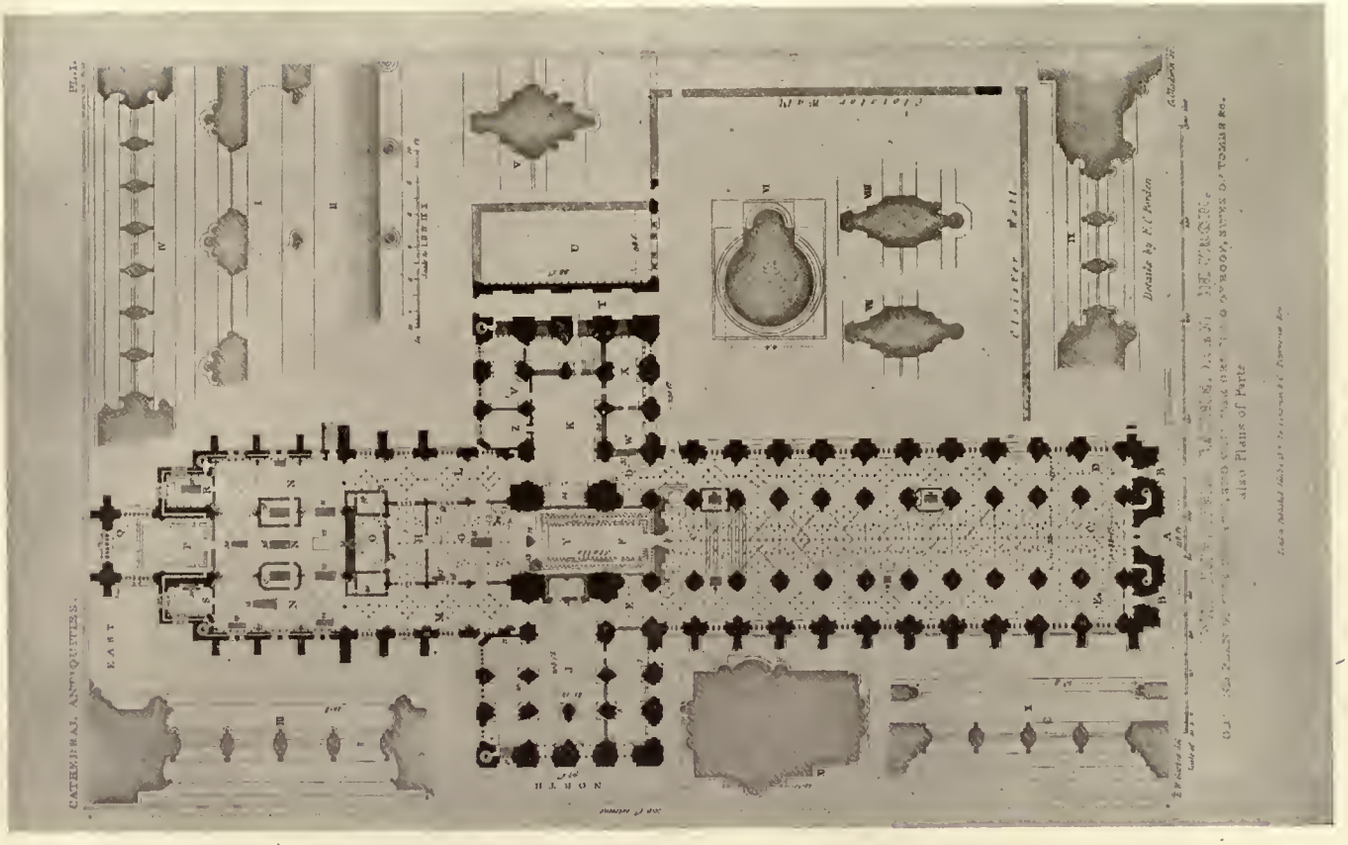
the cathedral: "Wykeham lies on his back in his Catholic dress, and shepherd's crook, with little children at his feet saying their prayers." A little further up the nave is the chantry of Bishop Edyndon. It is far less splendid than that of his successor, William of Wykeham; but the alabaster effigy of the bishop is the finest in the cathedral.

Leaving the nave, and making our way to the south transept, we find ourselves in the midst of early Norman work, with its enormous pillars, and circular arches and windows. Its massive grandeur cannot but appeal to the imagination; while in this part of the cathedral are several objects of marked interest. In one of the chapels, on the east side, lies Izaak Walton, "the prince of fishermen"; and many an "honest" American, "who loves to go anangling," gazed with reverent delight on the flat marble slab which marks the old man's resting-place. The stained glass window above his grave, which also commemorates his memory, naturally attracted much attention, for it is the best modern window in the cathedral. In the south transept too are a couple of fine old oak settles, black with age, once used by the mediæval monks; and also the brazier, before which they were wont to warm themselves.

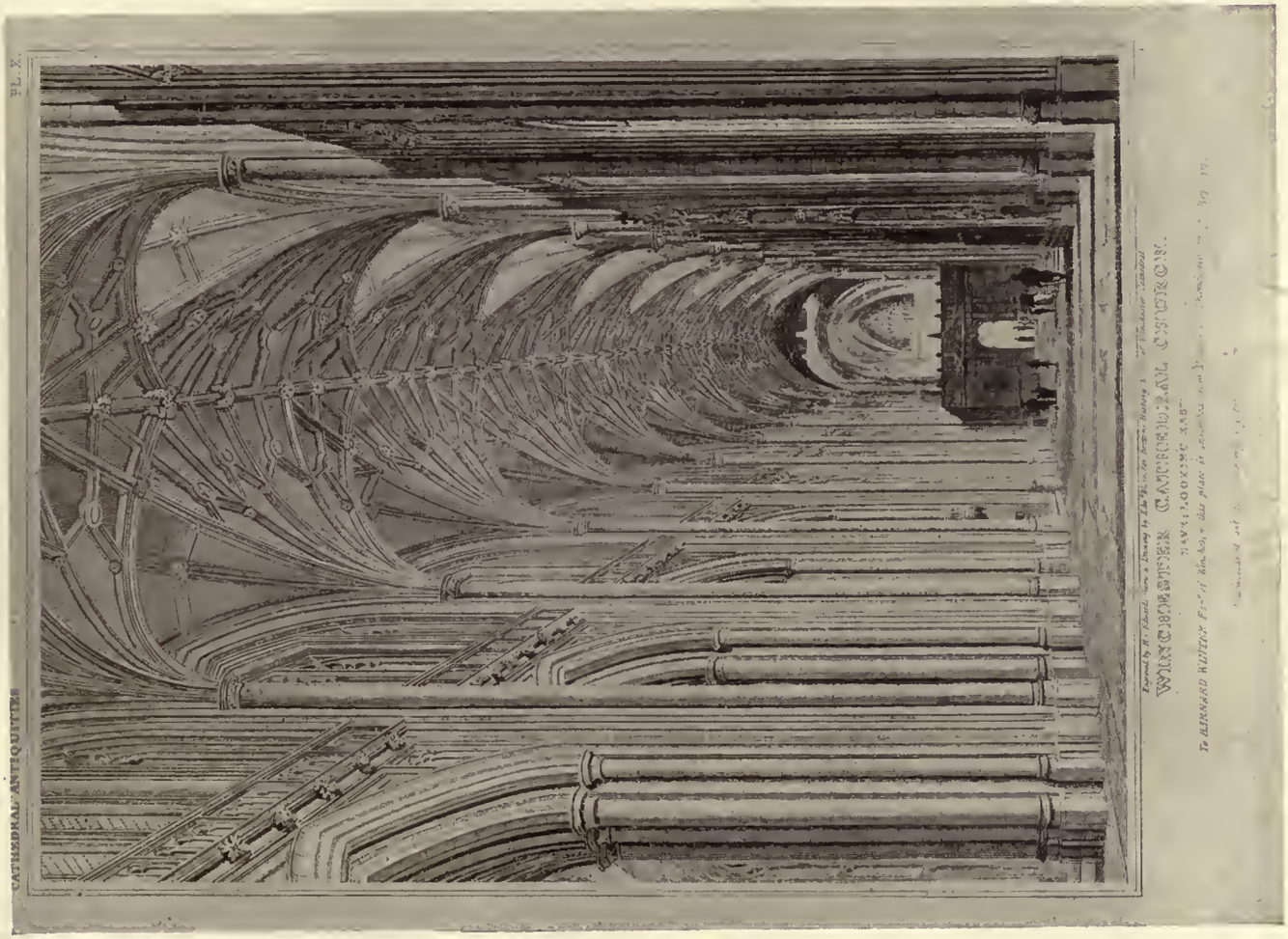
Ascending the steps from the transept to the south presbytery aisle, we pass at once from the architecture of the eleventh century to that of the fourteenth. Noticing on our way the burial-place of Richard, son of William the Conqueror, who like his brother Rufus, was killed while hunting in the New Forest, and also the spot where, in a silver cup, the heart of Bishop Nicholas de Ely lies buried, we enter the choir, and find ourselves in the midst of enchanting surroundings. Immediately in front rises the magnificent stone screen which shuts in the eastern part of the sanctuary. It is the finest screen of its kind in England, the only one at all in competition with it being that of St. Alban's. The present figures are modern, all the original ones having been destroyed at the time of the Reformation. The restoration however has been excellently carried out, both in conception and design, the statues being those of saints and bishops, of kings and queens, and men of renown, connected with the cathedral. On either side of the choir rise the stone screens of Bishop Fox, on the top of which rest the coffins or mortuary-chests of the Saxon and Danish Kings. These painted chests, six in number, full of dead men's bones, constitute the chief antiquity in the cathedral. They are unique in England. Nothing like them are to be seen elsewhere; although formerly, before the great fire of London, somewhat similar chests existed in old St. Paul's. When John Evelyn, the diarist, visited the cathedral in the time of Charles I, what struck him most was "the Saxon Kings monuments," which he said, "I esteemed a worthy antiquity." Incredible as it may seem, several of these chests were thrown down by the Parliamentary soldiers in the days of the Commonwealth, and the bones flung at the stained-glass windows. The sacred relics were however carefully preserved, and when Evelyn again visited the cathedral in 1685, he writes: "There are still the coffins of the Saxon Kings, whose bones had been scattered by the sacrilegious rebels, in expectation, I suppose, of finding some valuable reliques, and afterwards gather'd up againe, and put into new chests, which stand above the stalls of the choir." Two of the chests are "new," that is, dating from the time of the Restoration; the other four being the original ones of Bishop Fox. I was once present when the late Dean Kitchin opened one of Fox's chests, said by the inscription to contain the bones of King Kynegils and of King Ethelwulf, the father of Alfred the Great. When we lifted the lid, there were the bones of two skeletons lying in the chest. One of the skulls was of fine proportions and of exceptional development; and this, we concluded, might fairly be taken to be that of King Alfred's father, who died in 859, more than a thousand years ago.

But the mortuary-chests are not the only objects of interest in the choir. In the black oak stalls, we have, in the opinion of Sir Thomas Jackson, the eminent architect, "perhaps the earliest, and certainly the most beautiful stalls in Northern Europe." The finely-carved pre-reformation pulpit was the gift of Prior Silkstede, one of the best priors of St. Swithun's monastery. Moreover, immediately under the tower lies the black marble tomb, without inscription, but believed, according to tradition, to be that of William Rufus, slain by an arrow when hunting in the New Forest in the year 1100. His body, "dripping gore all the way was

The Crypt.



PLAN.
WINCHESTER CATHEDRAL.



THE NAVE.

Effigy of Sir Arnald de Gaveston.

brought in a crazy two-wheeled cart of a charcoal burner, drawn by a sorry nag," to Winchester, where "it was committed to the ground, within the tower of the cathedral, attended by many of the nobility, though lamented by few."

Immediately behind the high altar is situated what is called the feretory—a repository which we never failed to visit—wherein is collected a number of fragments, which speak only too eloquently of the barbarism of bygone ages. The feretory is thus described by an American lady: "One room," she says, "is a storehouse of fragments—headless trunks, broken legs, arms, and heads, some of them of great beauty. The whole destruction is sickening. But nothing touched us so deeply as the empty coffin of a baby, with the little stone pillow hollowed out to receive the little head. It was a hard couch at the best, for which to exchange a mother's soft warm bosom. Yet the baby could not keep even that, and its ashes are scattered to the four winds." Besides the baby's stone coffin, which is perhaps the most pathetic object in the cathedral, in the feretory may be seen the painted lid of a reliquary chest, given to the cathedral by one William de Lislebone in the time of Edward II; and also close by the chair in which Queen Mary (Bloody Mary) sat on the occasion of her marriage in the cathedral, to Philip of Spain, on St. James's Day, in the year 1554.

Leaving the feretory, bounded on either side by the chantries respectively of Bishop Fox and of Bishop Stephen Gardiner, we find ourselves in the eastern aisles of the cathedral, or what is more often called the retrochoir. The delicate beauty of this part of the cathedral can hardly be exaggerated. It is in the elegant early English style, with its clusters of slender Purbeck marble pillars and its graceful vaulting. Indeed the prospect from one point of view, looking over Fox's chantry from the north side, and taking in the exquisite Edwardine arcade, is said by an eminent living authority, to be unequalled in any cathedral in Europe. In this part of our cathedral stand the gorgeous shrines or chantries of Cardinal Beaufort and of Bishop Wayneflete. The cardinal may be remembered as the second founder of St. Cross Hospital, and probably as the builder of the great choir-screen in the cathedral. He lies in his splendid chantry, "one of the most elegant in the whole kingdom," and is represented in the red robes of a cardinal. Beaufort was succeeded as Bishop of Winchester by William Wayneflete, whose chantry occupies the corresponding position on the north side of the retrochoir. It is, if possible, even more splendid than that of his predecessor. Wayneflete deserves well of posterity. His name is associated, not with statecraft, but with education and learning. He was head master of Winchester College, the first provost of Eton, and the founder of St. Mary Magdalen's College, Oxford. In his superb chantry, which is kept in repair by the college that he founded, Wayneflete is represented in full pontificals, and as holding a heart between his hands, doubtless with reference to the *sursum corda* of the liturgy.

Between the chantries of Beaufort and Wayneflete now lies the recumbent figure of a knight in the chain armor of the time of Edward II. It is specially interesting as being the only military effigy in the cathedral belonging to mediæval times and because of its heraldic devices. The effigy represents Sir Arnald de Gaveston, the father or near relative of Piers Gaveston, the unfortunate favorite of Edward II. On the spot now occupied by Sir Arnald's tomb formerly stood the silver shrine of St. Swithun, the patron saint of the cathedral. This spendid shrine, the pride and glory of the cathedral, was utterly destroyed by the agents of Henry VIII at the time of the Reformation. An account of its destruction, and of the spoils taken, may be read in Cardinal Gasquet's volume on *Henry VIII and the English Monasteries*. It was reckoned that "the silver alone would amount to near two thousand marks."

Before leaving this part of the cathedral we always visited the Lady Chapel, which both from a historical and architectural standpoint is full of interest. It is built partly in the beautiful early English style of Bishop de Lucy, who lies buried in a long gray marble tomb just outside the chapel, and partly in the Perpendicular style of the fifteenth century. This eastern part of the Lady Chapel is associated with one of the most stately ceremonials ever enacted within the cathedral walls. On St. Eustachius's Day in the year of our Lord 1486, Prince Arthur, the eldest son of King Henry VII and Elizabeth of York, was born at Winchester, and was afterwards christened in the cathedral. The ceremony, an account of which is preserved in the city archives, was a most magnificent one. The bishops of Exeter, and Oxford, and Worcester took part in it. The cathedral was "hangede with Clothes of Arras and red Sarsanet." Great companies of "Lordes and Ladies and dyvers Gentilwomen" attended. "My Lady Cecill, the Queen's eldest sister, bare the Prince wrappede in a mantell of Cremsyn Clothe of Gold furred with Ermyn and with a Trayne." The baby was "put into the Fount by the Bishopp of Worcester," and afterward "confirmed by the Bishopp of Excester"; and then presented with "a riche cappe of Golde by Quene Elizabeth his Moder," after which "he was borne home by my Lady Cecill." Out in "the Chirche Yerde was sette two Pipes of Wyne, that every man myght drynke enow." Moreover the Queen made a splendid thank-offering of money to the prior of the monastery to be expended as he thought fit. With this money the eastern half of the Lady Chapel was rebuilt in the Perpendicular style we see to-day. To commemorate the occasion the royal coat of arms, several times repeated, are displayed in the new work, and also those of Prince Arthur, the infant

Prince of Wales. If only Prince Arthur had lived—he died at the age of sixteen—Henry VIII would never have come to the throne of England. The stalls in the Lady Chapel, believed to be the work of Bishop Fox, are worth careful inspection. Not only are they pronounced to be "the most delicate and refined woodwork in the kingdom," but they are remarkable for the number of animals and birds, exquisitely executed, carved thereon.

Having spent some little time in the Lady Chapel, and having just peeped into the lovely little chantry of Bishop Langton, who, having been elected Archbishop of Canterbury, died of the plague before he could leave Winchester, and so was buried in the cathedral, we usually halted on our way to the north transept, before the marble monument of Bishop Audemar. The monument is of interest, not only because of its fine carving and armorial bearings, but because Audemar was half-brother to King Henry III, and it also illustrates the curious custom of heart-burial. The bishop, whose relations with his diocese were not of the happiest kind, died at Paris in 1260, desiring that his heart might be buried at Winchester. This was accordingly done and the Purbeck marble slab, which represents the bishop holding his heart in his hands, placed in the cathedral. In the course of centuries the monument was several times shifted, and finally fixed against the wall where it now remains. But a few years ago, in 1911, it became necessary to lower the slab a few inches, when at the back of it, in a little square cavity in the wall, lay a circular leaden box some six inches high. There was no inscription on the box, the lid of which was broken, and it contained what appeared to be vegetable fibre and a small quantity of some dark-colored material. A scientific examination revealed the presence of animal matter, while the leaden box was pronounced by an expert of the British Museum to be of the thirteenth century. There could be no reasonable doubt that the leaden box was the one which contained the heart of Bishop Audemar, sent over from Paris in the winter of 1620–1. It was a thrilling discovery, and enshrined a story of antiquarian interest, which my American friends much appreciated. I may add that the box and its contents has been restored to the cavity in the back of the monument.

At length leaving the retrochoir, and making our way along the north presbytery aisle, we reached the north transept, in order to visit the crypt beneath the choir and the eastern end of the cathedral. The north transept itself is well worthy of inspection. We there see the early Norman work of Bishop Walkelin, near kinsman of the Conqueror, almost exactly as he left it. It is rude, almost barbarous, in character, but the general effect is magnificently impressive. In the opinion of a distinguished traveller, it is the most striking example of early Norman architecture in the north of Europe. Walkelin began to build the cathedral in 1097, and it took fourteen years in building; so the north transept, as we see it to-day, is between eight and nine hundred years old. The stone for the building, it is interesting to remember, came by water from the Quarr quarries on the north shore of the Isle of Wight; while Hempage wood, some three miles from Winchester, supplied the timber for roofing. With regard to this latter transaction, an interesting story is told. It appears that William the Conqueror granted his kinsman Walkelin as many trees in Hempage wood as he could cut down in three days. Whereupon the crafty bishop gathered together "carpenters innumerable," and cleared the entire wood of oak trees, leaving none remaining, save the traditional "Gospel Oak," under which St. Augustine is said to have preached. The King, we learn, was much irritated, and said to the bishop: "Most assuredly, Walkelin, I was too liberal in my grant, and you too exacting in the use made of it."

The crypt is entered from the southeast corner of the north transept, a short flight of stone steps leading into it. For some strange reason, possibly because of its semi-darkness and sense of mystery, it is always a favorite place with visitors. The American soldiers invariably delighted in it. And undoubtedly it is full of interest. Its rude Norman architecture, its weird surroundings, its ancient well of water immediately beneath the high altar of the choir, dating back to Saxon times, the stone coffins and broken fragments of mediæval architecture collected together—all appealed to their sense of antiquity. They were never in a hurry to leave the crypt. But when at length we gathered our forces together, taking care that no individuals were left behind in the spacious and gloomy vaults, and ascended into the light of the north transept, we felt that we had enjoyed a thrilling experience. Taking one last look at the massive masonry of Bishop Walkelin, we than passed down the north aisle of the nave to the great west doorway, from which we started. But there was one gravestone in the north aisle we never failed to notice—the gravestone of Jane Austen. It is extraordinary how many of the United States soldiers were interested in the gentle novelist. I was often asked where she was buried. Many of the men had read her stories, or knew something about her. All were impressed in seeing the black marble slab which covers her remains and in gazing at the stained-glass window which commemorates her memory.

Such are some of the items of historical and antiquarian interest which we were wont to consider in our perambulations round the cathedral. After all, they form but a fragment of what might have been seen had time and opportunity permitted. For the riches of the cathedral are almost

THE WALTON MEMORIAL WINDOW.

This memorial to the "Prince of Fishermen" is placed almost directly above the tomb of Izaak Walton at Winchester Cathedral. A fund for this purpose was started by lovers of the contemplative art on both sides of the Atlantic and finally completed through the efforts of Mr. Harry Worcester Smith, the well-known American sportsman of Worcester, Mass., in 1913.

inexhaustible. But what we had seen was not to be lightly regarded. It was something, we felt, to have visited the cathedral itself; to have stood in the glorious nave; to have wandered through the aisles and transepts; to have gazed in awe and wonder at the great screen; to have groped about in the dark and lonely crypt. It was something to have seen the mortuary-chests of the Saxon Kings, the chantries of the statesmen-bishops, the resting-places of Izaak Walton and of Jane Austen. So at least it seemed to me; and my feelings were, I think, shared by my American friends. Their keen and unflagging attention was a sufficient indication of their appreciation and interest. Such enthusiasm was not an experience of daily occurrence. To me it was a source of fresh inspiration and delight.

Lych-Gate at Ilsington, S. Devonshire, England

T. H. Lyon, Architect

SOME of the lych-gates or corpse-gates, through which you enter the churchyards in England, are of considerable interest. Under the shelter of these lych-gates, the coffin awaits the clergyman's arrival. Here he begins the burial service, leading the way into the church reciting the opening versicles. Our photograph shows a rare example of a lych-gate with a room over. It is a modern structure in all but the steps at the side. The original room fell down some fifty years ago, after having been in use for many a day as a school kept by an old woman, whose fees for learning to read and write were one penny a week.

The Lych-Gate, Little Church Around the Corner, New York.

The *Vital* Need Is the Immediate Resumption of Industrial Activity

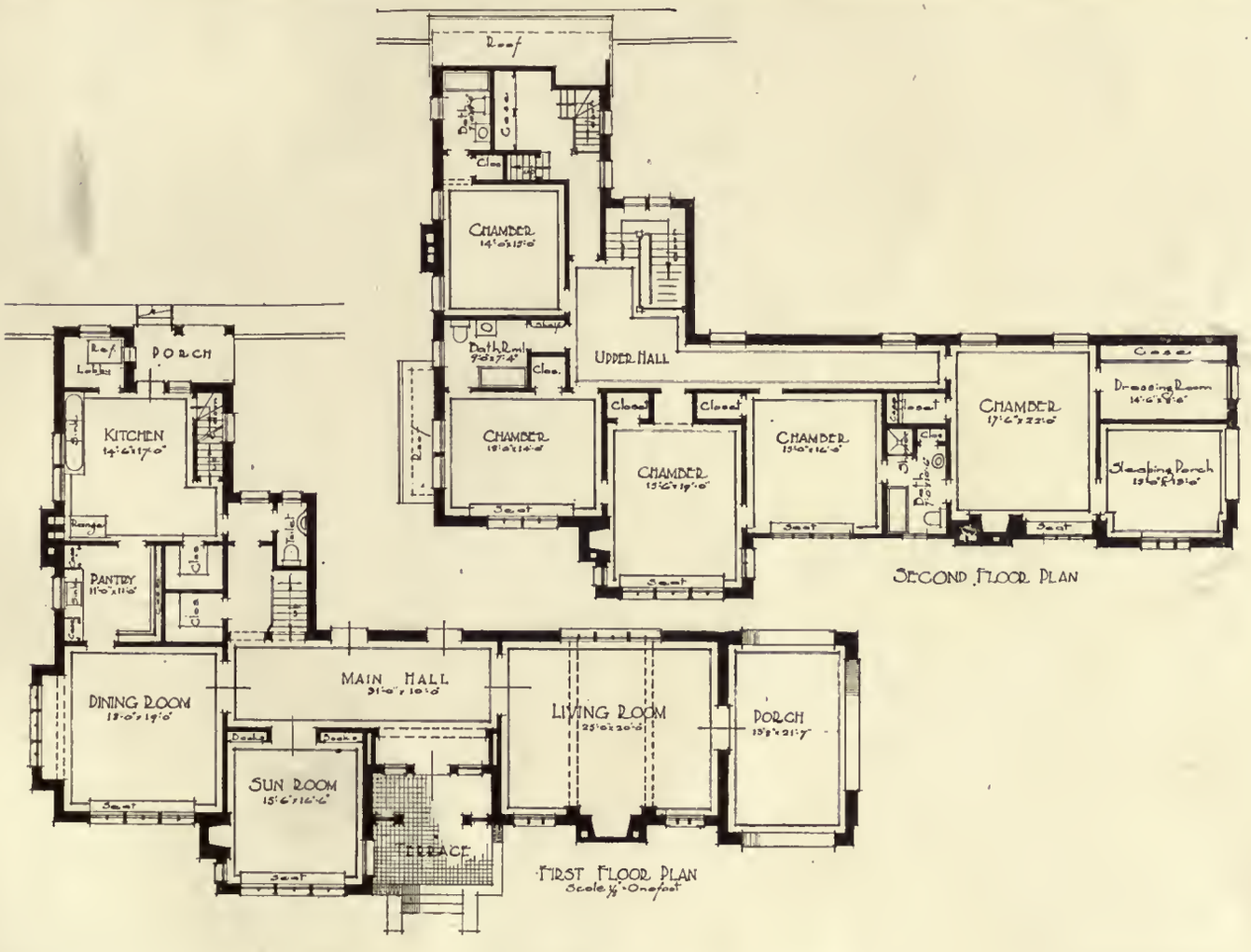
THE vital need of the situation is resumption of industrial activity to the fullest extent possible, and it should be the aim to find the wisest and most effective way to accomplish this.

It is felt that the proper basis of selling prices for the present will be found to be upon a scale considerably higher than those of the pre-war days. However, the level should be established on the lowest plane possible, having due regard to industry, labor, and government. The announcement of such a plane of prices will immediately create confidence in the buying public.

It is believed that the reductions from the high prices to the proper level, so that consumers may be justified in buying, should be made at once by one reduction.

The effort should be to wholly eliminate the abnormal, unbalanced stimulation that business has had and the inflated prices that have resulted, and to start anew upon a normal level can safely rely upon the law of supply and demand to govern future values. Such a policy adopted and announced will, it is believed, when understood by the consumer, induce at once sufficient buying to start factories, fill empty yards and warerooms, and to inaugurate the interrupted building and other programmes.

Industry and labor have a mutual interest in remedying present conditions, but industry should take the first step by the reduction of prices and commodities, and should require of labor as little aid as possible.



HOUSE AND PLANS, B. W. LAMSON, CINCINNATI, OHIO. C. G. Burroughs, Architect.

Address of Mr. Thomas R. Kimball, President of the American Institute of Architects

At the Twenty-Second Annual Meeting of the Illinois Society of Architects at Chicago

MY good friends, it is with conflicting emotions that I find myself trying to speak to you to-night. I have always felt, somehow, that the Chicago point of view is my point of view, but I have never succeeded in making the Chicago men realize it. I believe in results. I do not give a fig for the effort if it does not bring the bacon home. You men over here have a way of bringing the bacon home that I approve of, and I want to say as President of the institute that I have had tremendous satisfaction at the interest the chapter here in Chicago and its able supporter, this society, have taken in the affairs and the progress of the profession. After all, we have the right to stand for progress. I speak here to-night in two capacities, and do not forget that, because when I make a stupid remark I want you to charge that up to the individual who is trying to speak in a very intimate, personal way, and when I make a brilliant remark, if I may happen to do that by accident, credit that to the position I occupy.

I was asked in the invitation that I received to address you to-night, to say something about State societies, and particularly about the resolution that was put before the convention at Nashville on that subject, and I am not going to make a speech; I cannot, upon my life; but I *am* going to discuss that resolution, and then say some things that I cannot help saying. I will read the resolution, in order to discuss it at least in proper order:

"*Whereas*, There are now organized in several States in the Union State Societies of Architects, the object of which is to promote the business interests and efficiency of its members and generally admitting to membership all honorable practising architects of their respective States, and some of whose objects are identical with or similar to the objects of the American Institute of Architects and its chapters, which societies are worthy of the respect and assistance of and co-operation with the American Institute of Architects; and,

"*Whereas*, The work of the several chapters would be more effective in local professional, industrial and public affairs if they were in closer reciprocal relations with these State societies and other such organizations; and,

"*Whereas*, The American Institute of Architects would be more representative of the architectural profession and more influential in national affairs if it were in closer co-operation with such organized architectural bodies outside of its present membership.

"*Therefore, be it resolved*, That the Illinois Chapter of the American Institute of Architects recommend to the Fifty-second Convention of the American Institute of Architects, that the Board of Directors of the institute be directed to encourage the organization of State architectural societies and invite such organizations to be represented at the National Convention of the American Institute of Architects with such status as the Board of Directors may determine, and to maintain correspondence with the secretary or other officer designated by these societies; and,

"*Be it further resolved*, That the Illinois Chapter recommends to the Fifty-second Annual Convention, that the Board of Directors be instructed to encourage chapters of the American Institute of Architects to co-operate with such State societies and local organizations engaged in the promotion of the arts and industries allied to architecture."

I will interrupt right there. The American Institute of Architects would be more representative of the architectural profession if it had twice as many men in it. I want to bring that home to you. That is something I want to speak about later. The convention approves the resolution, absolutely, but the convention's policy is not necessarily the policy of the institute's president. The institute's policy is not necessarily the policy of the president. I am going to ask, before I cease to be president of the institute, that my successors make some changes in the institute itself, looking to a future arrangement whereby the policy of the president of the American Institute will be the policy of the institute itself. Now the institute has approved by passing this resolution. To my mind it might have been better if it had discussed it more. If they have accepted the idea that the State societies are to be stepping-stones to a greater institute some day, I am for them; if they have not, personally I am against them, because I do not see wherein we gain anything by having parallel powers moving along toward one object, but not as one society. A little history will help out on that. In France to-day, and in England to-day, they are trying to undo the mischief that they got into when they split up into many societies. Now they are trying in those two countries to come together, to unify the movement of architecture under one banner in each country, and they are warning us strenuously to avoid the dangers and pitfalls of division. We cannot be sure, if we encourage State societies all over the United States, that they are all going to be like the Illinois Society of Architects. We are pretty sure that they won't be, and I believe we ought to consider very carefully, when we create a dog with a tail, that some day the tail may be big enough to wag the dog. I believe it is well to consider that very carefully. The State society, it seems to me, as I see it exemplified here, stands for exactly what we stand for. I cannot see what should prevent you from sending on your applications. I cannot see why you hold there is a difference. I do not believe there *is* any difference. I believe you are for the same standards as we are, and I cannot see for the life of me why we should go along separately. That is my feeling. I love the American Institute to the point that I am willing to criticise it. I love this big crowd to the point that I am willing to find fault with what they do, but it is the greatest good to the greatest number that counts; it is the greatest good to architecture that I have at heart.

Supposing we encourage this State society movement, and it becomes a great national movement and gets beyond our control? Shall we be better off than we are to-day? Suppose instead of that we bring these State societies directly into the institute by making the institute more like the State societies? What earthly reason is there why the American Institute should not realize that bread and butter and business is of the first importance? Twenty-three years of that has made this society a very important body, which has accomplished a great many things. We have not done it. The institute, I believe, should do it. I believe we should put our best foot foremost. You can't produce an archi-

tect on an empty stomach. I believe the best thing for architecture is the most important thing, and for that reason I believe the young man in architecture is the only person worth considering. You can't play golf and think about the hole you have passed; you have got to think about the one in the future, and the one in the future of architecture is the young man. Now I would like to see the American Institute meet this body on the same ground, recognizing the importance of that thing, and have them come together, not as two organizations that are affiliated and helping each other, but as one. Is there any real sound reason why you should not all be members of the American Institute? I cannot see it. I have a letter here that will interest you on this subject, that I think I should read, as it speaks for the policy of the institute. Mr. Waid, our treasurer, writes:

"Responding to your question, I would say that my understanding of the resolution adopted by the last convention was that the institute thereby established a policy favorable to the organization of State Societies independent of the institute and of co-operation therewith by the institute. We have just organized such a society in the State of New York, the principal condition of membership being registration in this State. We have found a lively interest manifested by three or four hundred architects in the State, a large part of whom are outside of the membership of the institute. I believe the society will be a success and that it will be a help rather than otherwise to the institute."

That brings me to a point of consideration; why should we be willing as a profession that any man should practise architecture who is not qualified to enter the American Institute? Why should we be willing to have a registration law and grant a certificate to a man who is not honest and is not capable? If he is honest and capable, God knows he ought to be in the institute. We don't want any qualification that keeps an honest, capable man out of the institute. It is that sort of thing that has kept the institute back and has kept it from being a great national body as it ought to be. I believe I can foresee a time coming when every State in this Union will have a registration law that shall be fundamentally the same in all, and every certificate granted will be taken as entitling a man to enter the American Institute. Otherwise we do not stand right with our clientele. We do not stand right with the public. We are satisfied with a thing that is not right. We are saying that so-and-so is good enough to serve this man, but the only real, simon-pure professional man is the man that is in the institute. I believe all that belongs to a past time. I believe the profession of architecture to-day should be democratic in a big sense. I believe that we can afford to take absolutely the attitude that if we support this registration on a uniform basis, one day we will reach a point where we will have such a law in every State, and where the certificate can be recognized as entitling a man to come into the American Institute of Architects.

I do not think the success of the Illinois Society proves that State societies are a good thing. I think it proves, or rather indicates, that perhaps the American Institute ought to be a little more like the State Society. I believe that is really what it indicates, and I believe we have put that problem squarely up to our new committee, that is, our Post-War Committee. They are to find out for us what is wrong with us, and tell us straight. If my hopes are carried into effect, the Post-War Committee will become an absolutely permanent portion of the American Institute. I might say a permanent adjunct to the profession and practice of architecture. I wonder if you realize what it is supposed to be, what it is driving at. It is a committee that plays the game fundamentally. They are not bound by trammels or customs or past history or precedent or anything else. They open-mindedly go at any problem that comes up, without fear or favor, and as such I believe they are going to prove the greatest innovation that the profession of architecture has ever inaugurated. I look forward to the Post-War Committee being the sensation of the redevelopment of architecture after the war, and I beg of you to see that every one of you does what he can to make it so.

Among the activities of my administration, or rather the activities that are planned for my administration, is an effort to increase our membership. I went to the convention with the hope that I would be given a sort of club with which to bring that about, a power on the part of the directors given by the convention to decrease the dues since we feel that we are able to do it, and I felt that with that we could go out to the profession at large and say, "Now, if you will come into the institute at this time you will be yourself instrumental in making it possible for us to make the institute available to a great many more people." But in its wisdom the convention did not see fit to give me that power, and the result is I feel something like Samson when he faced the 10,000 Philistines. We have still got the job on our hands, and the characteristics of the animal are all here excepting the jaw-bone, and the job is here and we haven't the club to do it with. We have, however, got some pretty able material and some pretty willing material that has undertaken to handle that tremendous job of membership.

When we have a hard and rather nasty job, we come to Chicago to have it done, and in this case we have turned to Mr. W. Fred Perkins to take this little thing on as a kind of side line, and with his usual complaisance he has agreed to do it; but I beg of you all to help him. You see, I speak to you just as if you were all part of the institute. I can't help it. So far as I am concerned, you are. You all ought to be.

I could not make a talk of any kind without saying something about my own hobby. You wouldn't want me to. I believe in the professions, first and foremost, of all the manifestations of the human race. The professional idea to me is the most inspiriting and most enthusing. I believe that the fact that a man devotes his life, a life of study and accomplishment, to the public and to his clients is the biggest thing that we have in connection with our calling; and I believe it is perhaps the only requirement that would justify a union, a real, hidebound, hard-headed trade-union, and I would like to have the architects and the lawyers and the doctors, and everybody who serves the public and serves his clients before he does himself, join hands in a union, and the first purpose of it would be to make the young professional man able to earn a living and acquire a competency before he has got to that point in life where he is no longer able to make a contribution to the art that he happens to be practising. Now, I don't want any of you to forget that we haven't yet got a union, but that we are going to have it some day, just as sure as a new day is coming.

In that connection I was pleased to hear to-day that there has been a stepping-stone toward that started in Chicago, and that is the Art Service League, of which Mr. F. W. Perkins is secretary. That is a step in the right direction. It does not go far, however, but if it is right for any two to get together, it is certainly right for four, and when we have got up to the limit of those that can come into this Art Service League, why stop? Keep on going and take everybody into your league that has a right to call himself a professional man.

Now for a criticism of my friends in Chicago. You have a funny way of forgetting your algebra. You know an arithmetical sum is a simple problem. Why should you forget what an algebraic sum is? You have heard of "cancellation of effort." You are the best examples of it that I know of here in Chicago, unless it is in New York, and unless I line you up against each other. When a man in Chicago makes a great suggestion, somebody in New York rises up and proposes the contrary: when some one in New York suggests something worth while, some one here in his wisdom suggests the contrary. I put that up to Mr. Holsman, and he didn't think it was so, but I believe we have got the proof. We wanted to get rid of that canon on advertising, and we spent a year on a report. They put it over and had the good fortune to get rid of the canon against advertising. Immediately some Chicago man thought that wasn't quite the right idea, and you have stirred New York up by proposing that they should make advertising compulsory. Of all the things that were done, that was the one thing that started New York. They immediately passed a resolution over there, wanting Canon Four put back in the code. Now the result of the effort of New York and Chicago on that subject amounts to about as much as if it were left alone. That is the algebraic sum. Now you have started here a resolution before the institute in regard to State Societies, one that appealed to the institute to the extent that they adopted it. What does New York do? They pass this resolution:

"*Be and it is hereby resolved*, That in the opinion of the Executive Committee of the New York Chapter of the American Institute of Architects, the American Institute of Architects should discourage the formation of State Associations of Architects, whose standards of membership are of a lower plane than those of the institute, as being against the best interest of the Art and Practice Architectural, and it is further

Resolved, That the American Institute of Architects lend its efforts to increased influence among non-members of the profession by developing their interest in higher technical and ethical education and subsequent membership in the institute, rather than to lower its standards in order to gain merely an increase in membership."

Why can't we stop that and all line up in favor of the things that are worth while and quit pushing opposite ways? I do not believe those New York men understand what they are backing. If they could stand before this crowd they never would for a minute call it lowering their standard to ask you to come into the institute. I am sure I do not. I am sure we have a lesson to learn, as I said before, from the example you have set. You have shown us that. By attention to business you can improve the architect's chances for being somebody in this world, and to me that is the most important thing there is in any architectural society.

It is getting late and I have talked enough. I just want to make a little confession of faith here before I stop. If I can have my way, I would have the American Institute of Architects a greater institute. I would make it effective through a powerful presidency. No democracy can be 100 per cent effective without an autocratic emergency executive, which means giving to the next president of the institute the veto power. I believe in a much more easily attained livelihood for the professional man, because in no other way can we hope to make good our professional claim of serving our clients and the public with a worth-while service. I believe in big men for big jobs, and I would have much more attention paid by the American Institute to their discovery and use. Modesty is a characteristic of greatness that should not be allowed to interfere with the capitalization of our best material. The institute is filled with big men. There are many of them right here in Chicago that you will never hear from unless you yourselves dig them up because they are modest and they are keeping their lights under a bushel. I believe, as you know, in a league of the professions, and I would have the American Institute do its part toward creating such a union. Finally, I believe in just two bodies of architects in the country, those who are in the American Institute and those who once were. I thank you.

A Patriotic Duty as Well as a Good Business Proposition

We commend this extract from a long editorial in the New York *Sun* to the consideration of those who have money to invest:

"To build houses money is needed, and the men who control money can do no more patriotic or profitable thing than to supply it to home builders. By furnishing the money they would provide the means to employ labor, and employed labor would seek to invest its surplus earnings in more dwelling houses. The menace of non-employment would quickly disappear, the capital invested in dwelling houses would return a good profit, the owners of those dwelling houses would contribute by their contented industry to the further and continuing material, political, and social prosperity of the nation.

"The great machine by which the capital for this tremendous enterprise should be distributed can be erected by the capitalists of the United States in accordance with the sound principles of business. What is required is a corporation, or number of corporations, financed from the great money centres, and operating in accordance with a general policy modified to meet the needs and practices of various sections. It is likely that the laws of most of the States as they stand now would protect borrowers and lenders equally; if in any State this was not the case the necessary legislation could be enacted. The terms of loans should be as liberal as sound business practice would permit; the element of charity should not enter the transactions of the corporation, but its directors should be animated in their conduct by the highest ideals and prudence."

Public Works Can Help

"There is but little if any doubt in the minds of the leading business men of this country that the next few years will be a period of great activity and prosperity. Such being the case, a less than normal amount of public works construction during these years would be highly in order because labor and industry would be fully employed with private affairs. But in the meantime and until the business of this country has gotten back to a normal basis, the Congress of the United States and the several States and municipalities should take up the slack in business by providing for concentrated programmes of public works."

Editorial and Other Comment

Pointing the Way

WE take particular pleasure in publishing the letter from Mr. Eberhard, of the well-known Philadelphia firm of Magaziner & Eberhard. It makes an admirable reply to Mr. Hamlin's last article, and voices what we believe to be the ever-increasing tendency of the times. There is only one way for any body of men, who are working along similar lines and for a common purpose, to avoid needless friction and dissatisfaction, and Mr. Eberhard well expresses it:

"Does the architect realize, and act as if he did, that the men working for him are of the same clay as he; that for every ambition that he has, for every aspiration, the man in his drafting-room has one to match; that as he finds it pleasant and stimulating to have his experience broaden out, so also does his draftsman, and that the one the same as the other becomes stifled when one day is just the same as the one before and the one after."

The Housing Shortage

IN this number are presented some interesting comments on housing conditions. The report from Mr. Ihlder of Philadelphia is especially enlightening, and no doubt expresses conditions that prevail pretty generally. Apparently there is not much hope of immediate relief anywhere, and the question of high rents and eager competition for available places to live will continue for a considerable time. From the Council of National Defense, Washington, we learn that:

"It has been estimated that the United States was short a million homes at the end of the war. A campaign to stimulate and encourage increased building was begun soon after the end of the war, and carried on during the first half of the present year, and the national need of increased building became thoroughly advertised. In the meantime, however, those industries whose activity is a prerequisite to building, such, for example, as brick-making, lime, cement, and lumber production, remained relatively stagnant, or tied up with price and labor disputes, until late in the spring. The production of raw materials necessary in building construction was far below normal throughout the armistice period. Many plants were operating on part time, and some were closed down entirely. Glass production was reported to be on a 50 per cent basis as late as May. In response to the building campaign and the recognition of the general need, and also, no doubt, in anticipation of handsome prices rendered obtainable by the acute shortage of housing, a fairly large building programme was eventually gotten under way, and it is now experiencing handicap by reason of the shortage of building material which, throughout the winter, was obviously impending. The period of high and increasing rents and of high and ascending prices of houses appears, therefore, to be fairly certain of continuing for some time to come."

Wanted: A Board of Censors for Every Community

IT would be "a consummation devoutly to be wish'd" if we might have a board of censors in every town and city in our country to save us from the local carpenter and builder, the man who advertises himself as both arch-e-tect and builder. We look back with pain and a sigh upon the jig-saw period, upon the trail of Queen Anne and other queens, upon mid-Victorian, upon some late ebullitions of so-called domestic Gothic. And alas! and alack! we are looking too frequently, these modern days, upon near-colonial, both Dutch and American. The old colonial houses that one finds and loves in wandering through New England, or out on Long Island, have nearly always the redeeming grace of having been built by carpenters who took their models directly from old books of approved types. Their charm lies in the directness of plan and simplicity of detail. They are restful to look at and restful to live in, as many can testify, and as many more will, as they follow the call these days of city rent-robbers and go back to the farm.

There are towns in New England made lovely by the old elms and a prevalence of colonial houses, inheritances of the past, and it is a pity that mere money should be permitted to build houses among them that are in execrable taste and out of keeping with everything surrounding. Our suburbs are places where a house is a house, and the newcomer is no respecter of traditions. If he has the price and the bad taste he can destroy the livableness of a whole neighborhood by his expensive big house with eight bathrooms, a watchman's tower, and a music-room for the pianola or phonograph. If such people have no taste of their own, why not subject their plans to a board of censors, who could show them the way to build in keeping with the traditions of local good taste of earlier times! "Colonial" is a name to conjure with, and in the hands of architects with a knowledge of the past and a sense of fitness it can be played upon with variations and yet be kept essentially true to the original.

ARCHITECTURE has published a number of charming pictures of alterations of old houses during the past year, showing some admirable adaptations of colonial. A helpful sign of the times with regard to suburban architecture is to be found in the marked advance shown in many homes built to meet the needs of our industrial towns under the direction of the United States Housing Corporation. An ugly or even a tolerably successful house out of key with its local environment is an affront to the whole community. We must leave it to the architects to teach both the public and their clients better manners.

The Architect and the Draftsman

ARCHITECTURE,
597 Fifth Avenue,
New York City.

To the Editor: The draftsman who went to war has failed to return to the drafting-board; they say he has found more congenial employment and better pay elsewhere.

The architect is busy again and needs him; he must have him, in fact, and a substitute cannot be developed overnight. What is he going to do about it? There is but one ready answer: "Get him back to the board." Does this mean that he should be looked up and argued with? That's hardly practicable. The answer is that a draftsman's job should be as attractive and as well paid and have just as many possibilities as similar jobs in any other line. If it is not so now it should be made so.

For a man to become a capable draftsman means a serious effort, years and years of hard work, often overtime work, and generally a real liking for the business. He should be able to do better for himself by using this knowledge and ability than in doing anything else. He will not leave it for something else if it gives him somewhere near the return his brothers in other lines are obtaining.

The fact that so many draftsmen have refused to return to the drafting-room after leaving the army is an indictment against architects, their offices, and the methods which architects have employed in dealing with draftsmen.

Is it possible that the draftsman's job has not been as desirable, either from a point of view of pay, pleasant working conditions, or for future outlook, as the jobs of men in other lines of work? It is not only possible, it is and has been a fact since the writer can recall. It is not the fault of the draftsmen; they have been as good as other workers. It is distinctly the fault of the architects. As they have failed to accomplish anything for themselves as a body, so have they failed in the conduct of their individual offices. They have lacked vision; they have not known the meaning or value of co-operative effort or of how to obtain individual effort. They have been selfish and short-sighted and have not allowed themselves or their men to extend to their fullest. The result of all this is that they have wasted a great percentage of their own work and that of their men. The returns for all have been small, and for all the outlook has been unpromising, the profession abused; and, worse yet, our architecture is the mirror in which all this discord and failure is reflected.

It is the business of the architect to put things to rights. It is to the credit of the draftsman that he has shown a willingness to do his part to help matters out by the establishment of an association of draftsmen so that these things can be discussed. But the architect can hardly relinquish his position as leader in matters concerning the profession. It would be well for him to meet their situation squarely and work out an honest solution. Otherwise his leadership might well be questioned; and perhaps the draftsmen will decide these matters without his say so and force a solution without his consent.

If the architect is willing, just what can he do? He should first of all try to get a distant view of himself and his office in relation to other business; he should try to see his office as an integral part of a business system or order such as he would wish to subscribe to, one that is based on honesty and fairness and congeniality. He should question whether his office is representative as a unit of such a system. He should feel his repsonsibility. A million like him seeking to be right would go far to making this country the right sort of a place. He is one of that million.

Does he realize, and act as if he did, that the men working for him are of the same clay as he; that for every ambition that he has, for every aspiration, the man in his drafting-room has one to match; that as he finds it pleasant and stimulating to have his experience broaden out, so also does his draftsman, and that the one the same as the other becomes stifled when one day is just the same as the one before and the one after.

Now, having thought this over, he might call into his private office one of his draftsmen who has been diligent and tell him he is satisfied with his work, and for him to carry on, that he should not be ambitious to leave and go into business for himself unless he is willing to take a hundred chances, but that his ambition might better be in the way of making himself more useful and necessary to the office and the office would, in turn, stand by him.

Having said this, how about outlining just what the office is going to do for this draftsman? Sure! Let him keep his job and give him a raise once in a while. That's not enough. He has a little more coming to him than that. It's not just a case of a job with this sort of man. It's his life's effort he is giving. He has a right to expand this effort to his limit. Mr. Architect must realize this, if he wants the best out of his man, and act accordingly. He must think of his draftsman as his brother architect. That's the key-note! Some time the one is the better man, some time the other; there's no rule. The boss, as he is known, has, however, the advantage of holding the pocket-book. He should not, however, presume upon this advantage. His draftsman is working with him, not for him.

On the one hand, it is a plain business proposition. The architect allows his draftsman to do his best because it will pay him best. On the other hand, it is the decent thing to do. It is the "esprit de camaraderie" in its best form.

There is necessary a better understanding between the architect and the draftsman; the draftsman to learn more of the point of view and the troubles of the architect and the architect to know his draftsman better. So long as either believes this is not worth while doing the profession will have a handicap; but if accomplished it will prove in just the same proportion a real help.

Mr. Magaziner and I are working on plans for an office organization which we hope will solve for us the problem of the business relationship of ourselves with the other workers in our office. When we have gotten this in some form, I will be very glad to write something about it, if you wish.

I am, yours very truly,

VICTOR EBERHARD.
MAGAZINER AND EBERHARD, Architects,
603 Chestnut Street, Philadelphia.

NURSES' HOME, GREENWICH, CONN.

Wm. B. Tubby, Architect.

REAR OF BUILDING.

LIVING-ROOM.

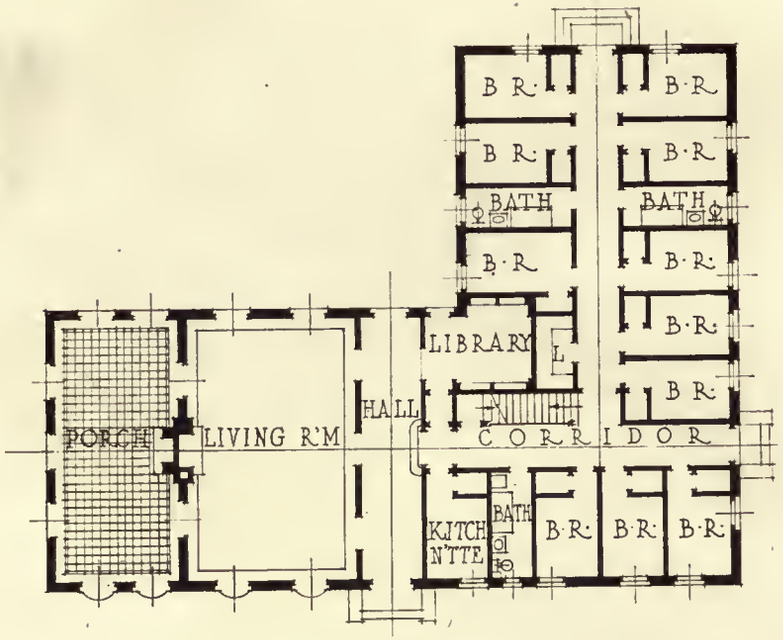
Wm. B. Tubby, Architect.

NURSES' HOME, GREENWICH, CONN.

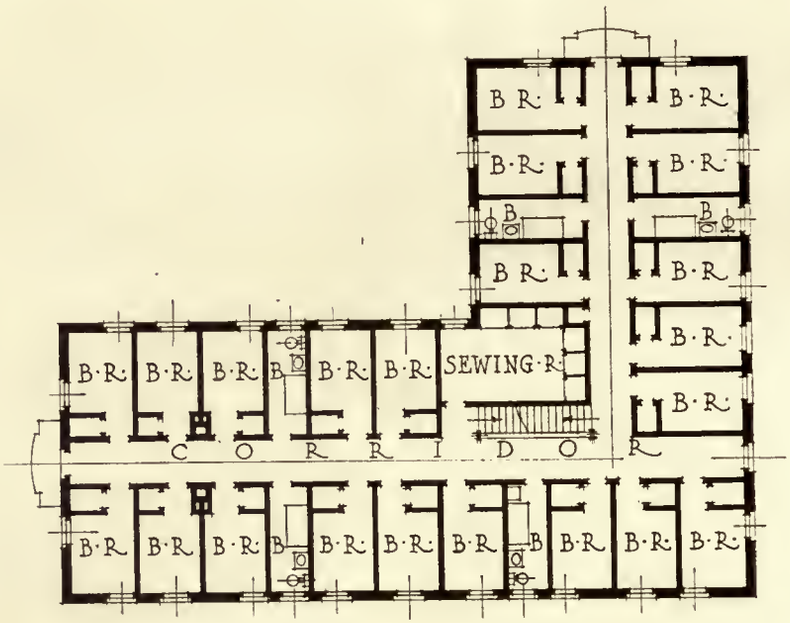
ENTRANCE TO PORCH.

MAIN ENTRANCE.

NURSES' HOME, GREENWICH, CONN.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

·NURSES·HOME·AT·GREENWICH CONN
·WILLIAM B·TUBBY ARCHITECT·81 FULTON·ST N Y·C

COUNTRY ESTATE, ALBERT HERTER, EAST HAMPTON, LONG ISLAND. Grosvenor Atterbury, Architect.

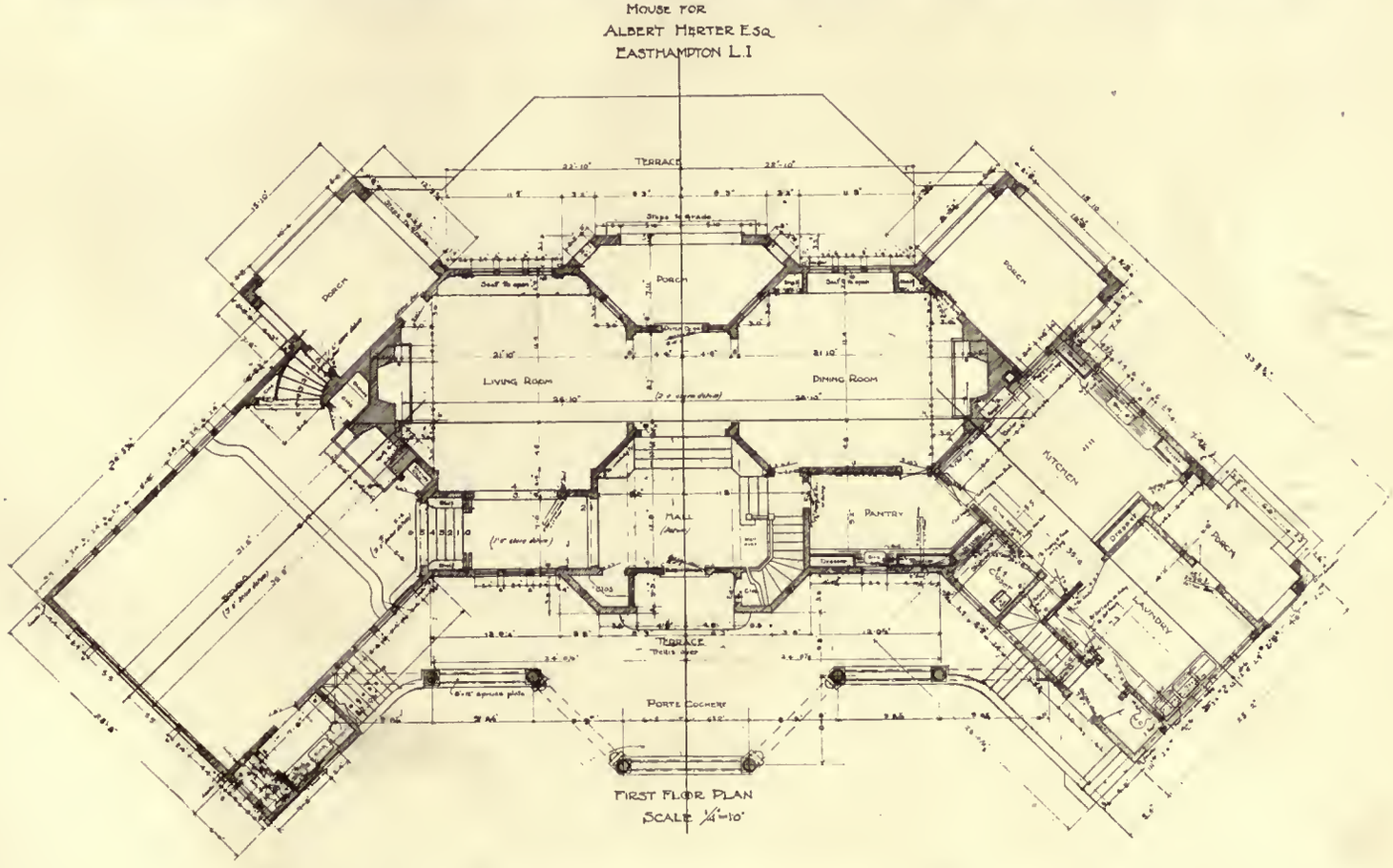
GARDEN VIEW.

BOAT-HOUSE.

Grosvenor Atterbury, Architect.

COUNTRY ESTATE, ALBERT HERTER, EAST HAMPTON, LONG ISLAND.

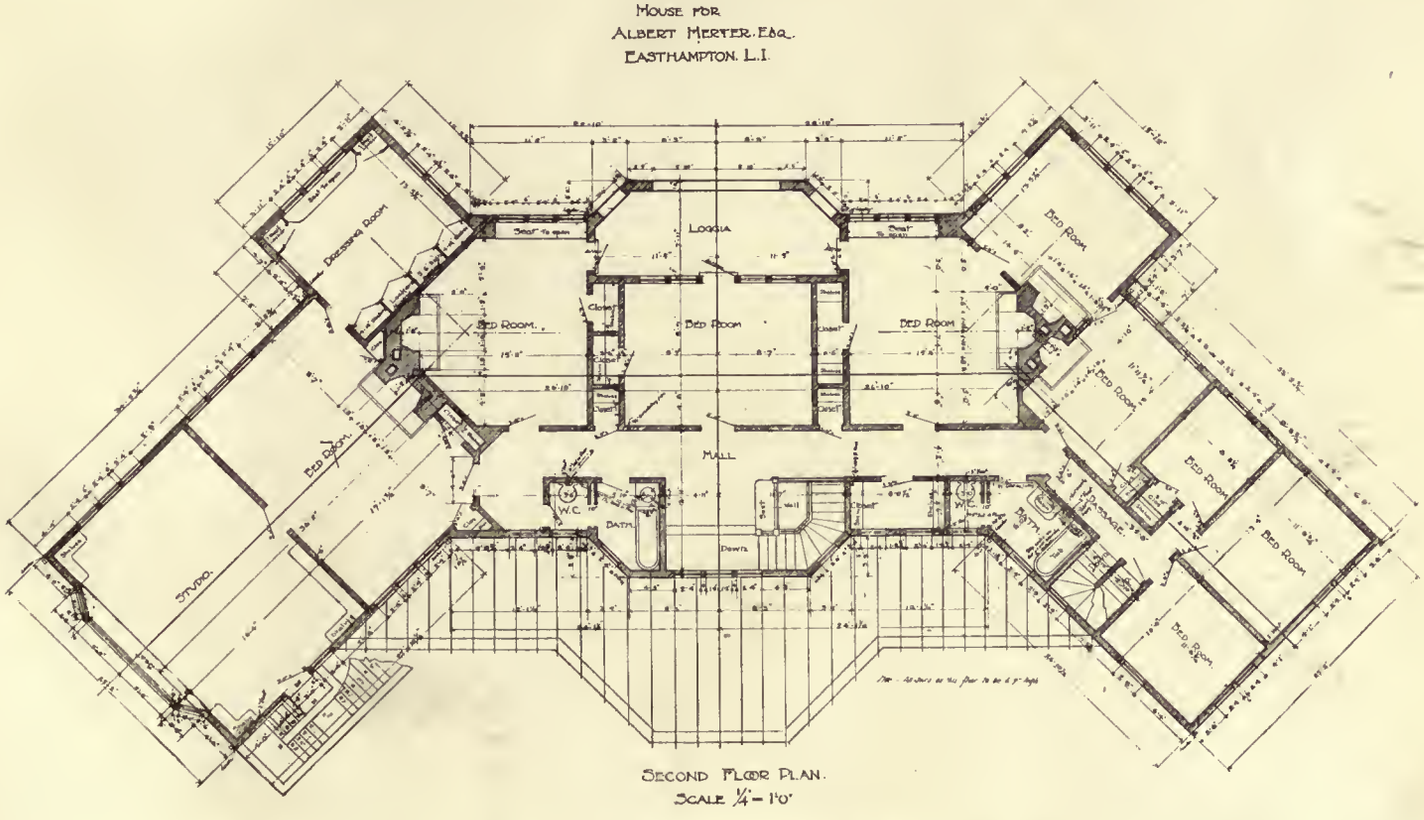
PERGOLA.



Grosvenor Atterbury, Architect.

COUNTRY ESTATE, ALBERT HERTER, EAST HAMPTON, LONG ISLAND.

BEDROOM.



Grosvenor Atterbury. Architect.

COUNTRY ESTATE, ALBERT HERTER, EAST HAMPTON, LONG ISLAND.

INTERIOR.

INTERIOR.

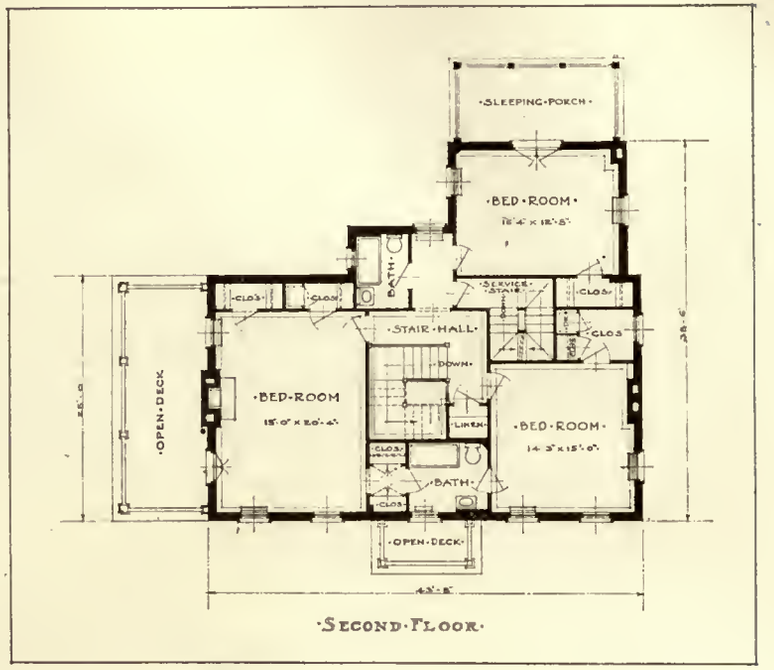
Grosvenor Atterbury, Architect.

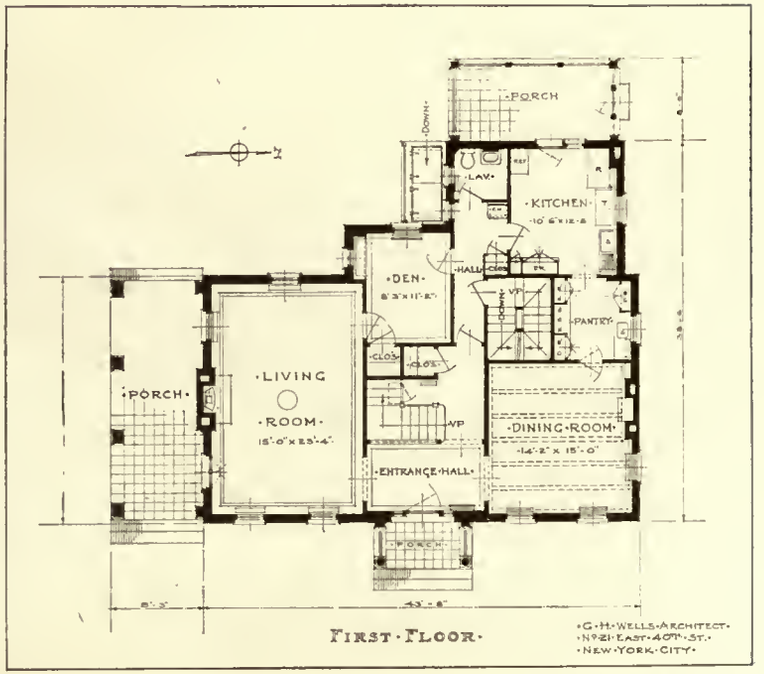
COUNTRY ESTATE, ALBERT HERTER, EAST HAMPTON, LONG ISLAND.

HOUSE, GEO. H. WELLS, MOUNT VERNON, N. Y.

Geo. H. Wells, Architect.

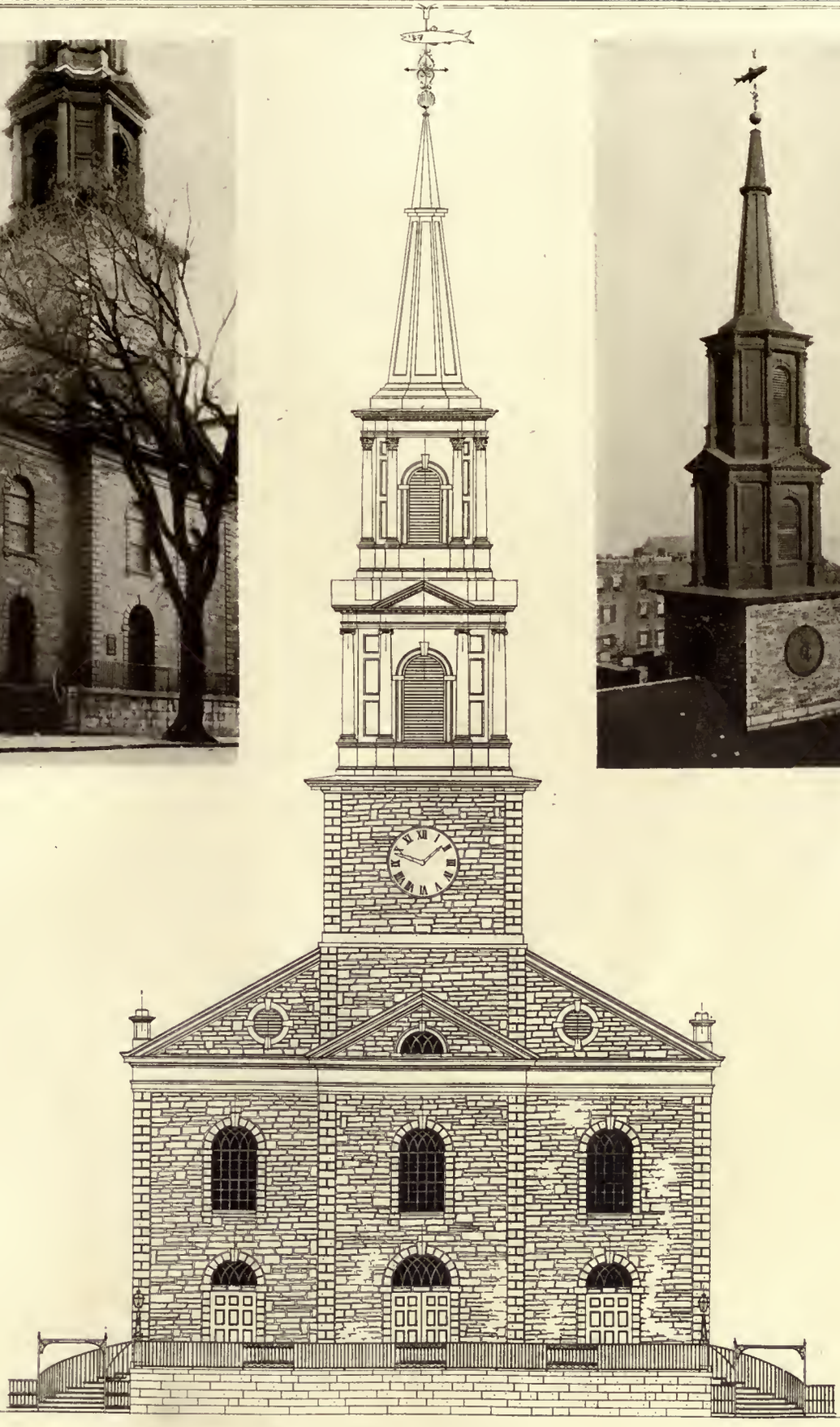
MAIN ENTRANCE.





Geo. H. Wells, Architect.

HOUSE, GEO. H. WELLS, MOUNT VERNON, N. Y.



CHAPEL ST ELEVATION

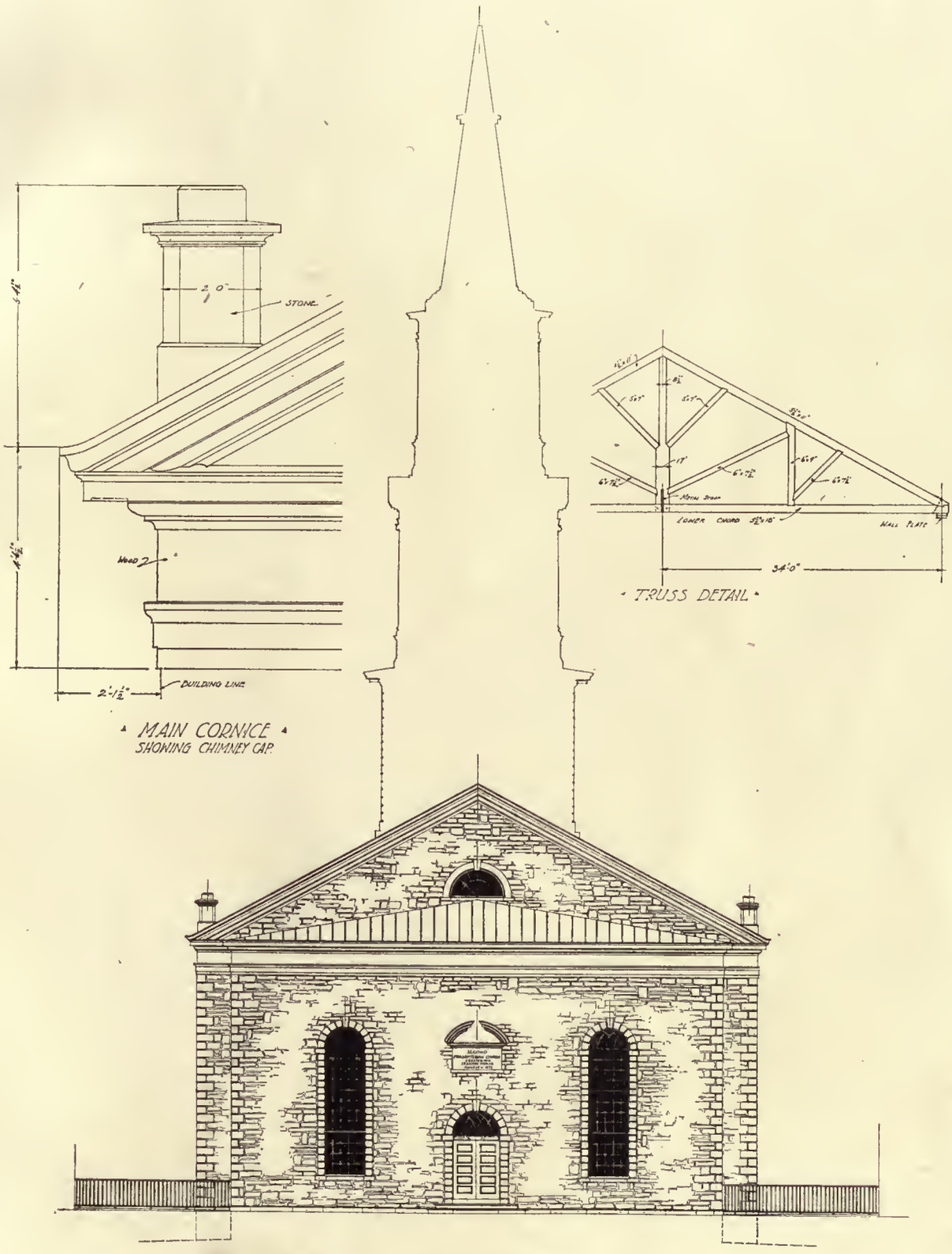
2ND PRESBYTERIAN CHURCH

ALBANY N.Y.

Ph. HOOKER - ARCHITECT

1815.

Measured & Drawn by
J. L. Dykeman '18



MAIN CORNICE
SHOWING CHIMNEY CAP.

TRUSS DETAIL

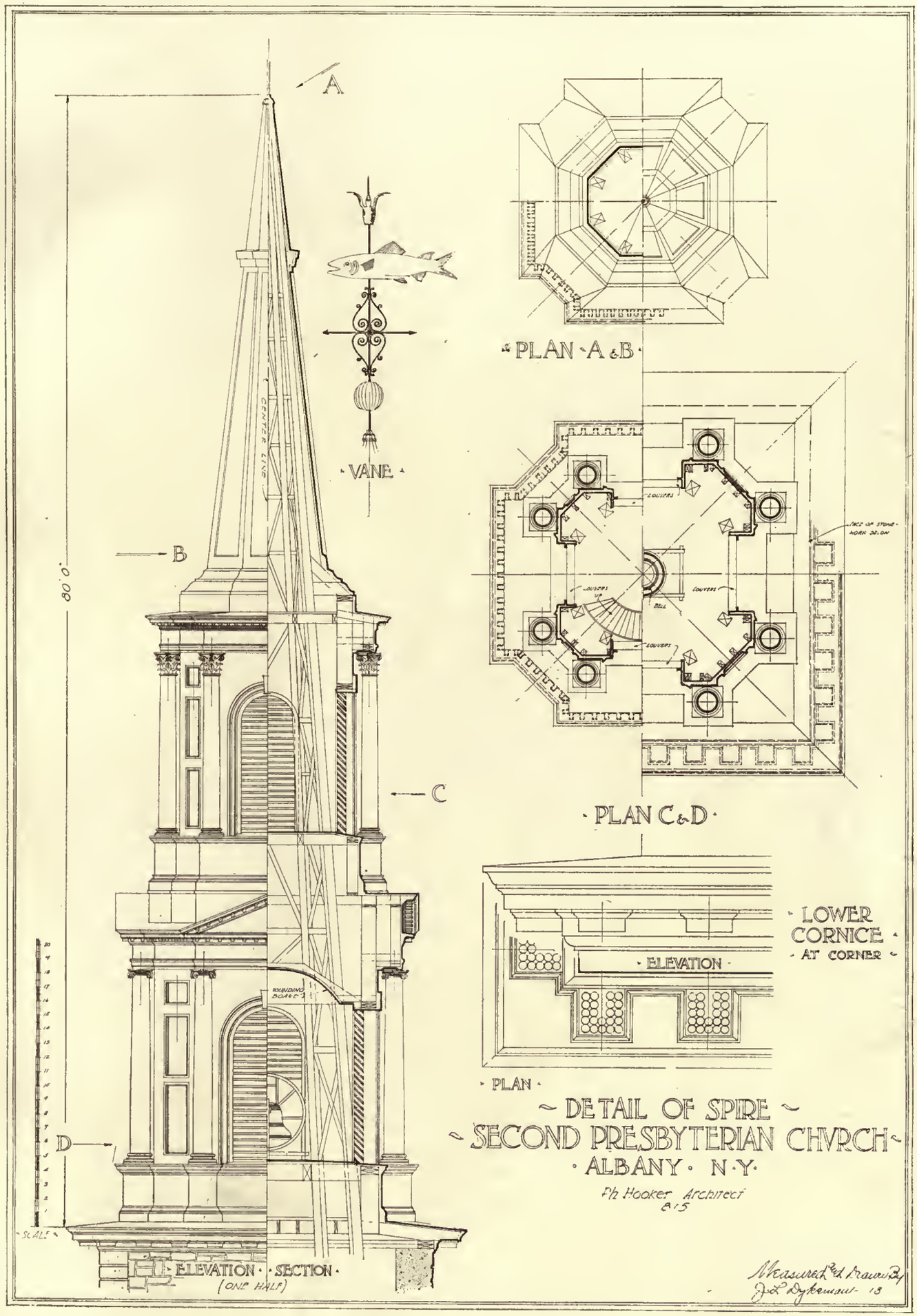
LODGE ST. ELEVATION

SECOND PRESBYTERIAN CHURCH

ALBANY. N.Y.

Ph Hooker Architect
1810

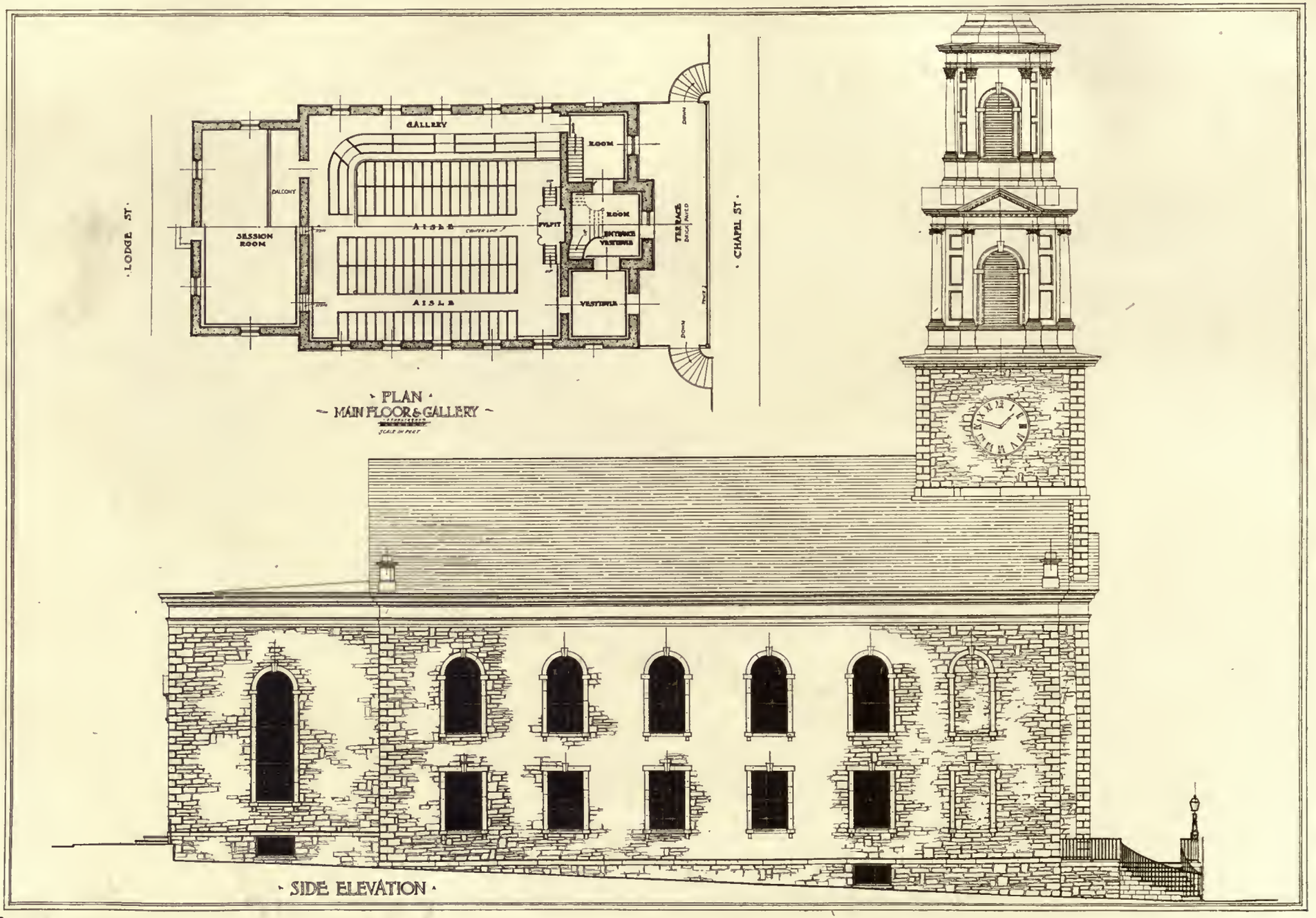
Measured & drawn by
J. L. Depeyster '16



~ DETAIL OF SPIRE ~
~ SECOND PRESBYTERIAN CHURCH ~
· ALBANY · N·Y ·

Ph Hooker Architect
8·15

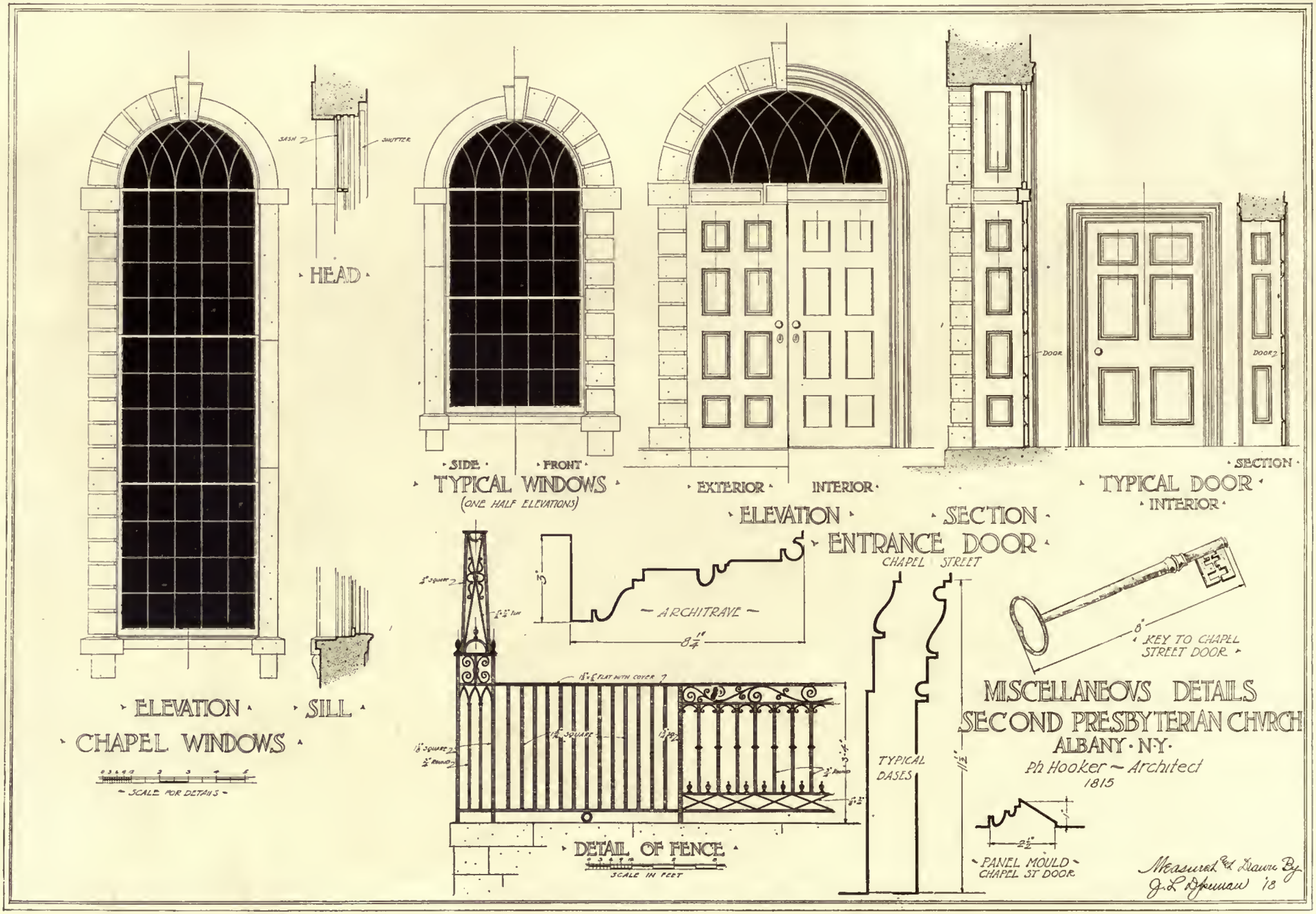
Measured & Drawn By
J. L. Dykeman - 18



SECOND PRESBYTERIAN CHURCH, ALBANY, N. Y.

Ph. Hooker, Architect.

Measured and drawn by J. L. Dykeman.


SASH
SHUTTER
HEAD
SIDE
FRONT
TYPICAL WINDOWS
(ONE HALF ELEVATIONS)
EXTERIOR
INTERIOR
ELEVATION
SECTION
ENTRANCE DOOR
CHAPEL STREET
DOOR
DOOR
SECTION
TYPICAL DOOR
INTERIOR
ELEVATION
SILL
CHAPEL WINDOWS
SCALE FOR DETAILS
ARCHITRAVE
8 1/4"
DETAIL OF FENCE
SCALE IN FEET
TYPICAL DASES
KEY TO CHAPEL STREET DOOR
MISCELLANEOVS DETAILS
SECOND PRESBYTERIAN CHVRCH
ALBANY · N·Y·
Ph Hooker ~ Architect
1815
PANEL MOULD
CHAPEL ST DOOR
Measured and Drawn By
J. L. Dykeman '18

Art and Electricity

By DeWitt Clinton Pond

THE artist dreams, and dreaming he creates—art is produced through inspiration. The novelist, impelled by the pressure of a plot that has struck fire within his imagination, writes his masterpiece. The painter, thrilled by the color of the hills, the mystery of the plains, or the surge of life in a great city, is driven to express these in tangible things on canvas. The architect can only design a thoroughly artistic structure if he has first a definite and inspired conception in his mind.

Hall lighting.

Negatively, if no dream inspires the worker, whether he works with oils or words or building materials, then that which he creates is the work of an artisan and not of an artist.

To the dramatist the play's the thing; and to the architect the building. Because of this, mere draftsmanship is not architecture, and mere cleverness is not art. If the architect does not feel an impelling force driving him to create, his work will lack life and character. It will be as a dead thing.

But the dream is not enough. Inspiration must be expressed. Many men and women are thrilled by the inspiration of a beautiful home—a home that would express latent hopes and desires within them, but unfortunately, they cannot make these longings articulate. Technique is necessary, and this is what the training of the architect is for. Given the inspiration and the technique, the masterpiece of the architect is assured.

The question of the technique of an architect, however, is one which has not been definitely settled. Does the architect, working with structural materials, create his masterpiece in the manner that a painter working with oils and pigments creates his, or is the architect's technique confined to the making of a beautiful drawing? Many writers have lamented the fact that architecture has become so far separated from the actual construction of buildings. In the mediæval days the builder designed as he built. He combined a knowledge of structural design with a knowledge of artistic expression. The result was a perfect combination and we have still to learn from the builders of olden times the perfect art of architecture.

Modern conditions make this type of work impossible. A few architects are now acting as builders, but on the whole there is too little relationship between design and construction. The architect's work is in the drafting-room, the builder's work is on the field, and some process of growth seems necessary in order to bring these two types of activities together. The architect might be able to help in this process provided he assumed a more sympathetic attitude to the actual operation of building. If he could *feel* the structure he is designing in three dimensions rather than as a flat plan, section, or elevation, his attitude would be more healthful than that of the mere designer of drawings. In order to do this he must have a conception of the building as a whole—its construction, its structural members, its appearance when finished, and even a conception of the appearance of the rooms when the furniture is placed within them and when used by the occupants of the building.

To carry out this programme, the architect must take to himself technical knowledge of construction, and at this, as a rule, all that is artistic in the architect rebels. This is probably due to two factors. The first is that technical knowledge is exact and scientific, whereas the architect is constantly interested in having a free scope for his imagination. The second is that the schools have never attempted to teach technical subjects in a manner that would interest architectural students in the big factors and interesting developments of structural work, and have confined themselves to teaching formulas which unquestionably bored the artistic students.

There is, however, a latent interest connected with all structural work which can be found if proper diligence is used. Artists have seen in the gaunt steel skeletons of a building inspiration for their paintings and etchings. There might be written a romance of construction typical of the force of American life, and if the architect grasps such a conception of structural problems he will at once be interested in many technical questions which undoubtedly bore him when presented simply as formulas and mathematics.

In one phase of work alone, which is necessary to the complete building, there are many possibilities of interest which are overlooked. At one time the word electricity opened vistas of possible development to the mind of the most phlegmatic person. The possibilities which electricity called to mind seemed limitless, but in the accomplishment of the end which electricity now serves resort was made to technical knowledge and information. At once electricity became a scientific subject and enthusiasm was dampened by seemingly endless formulas and irksome experiments. It was not until the student had studied for years fundamental rules governing the action of electricity that he was able to grasp possibilities of the subject. Often by this time

For the music corner

Suggestions in Connection with Standard Symbols.

It is important that ample space he allowed for the installation of mains, feeders, branches and distribution panels. It is desirable that a key to the symbols used accompany all plans. If mains, feeders, branches and distribution panels are shown on the plans, it is desirable that they be designated by letters or numbers.

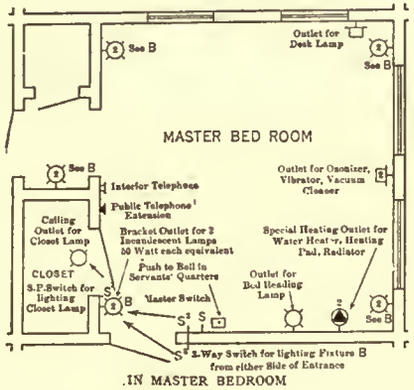
The following plans show the use of standard symbols on plans, with their necessary explanatory matter.

Heights of center of wall outlets (unless otherwise specified):

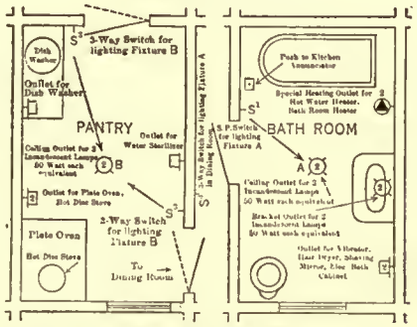
Living rooms ..... 5 ft. 6 ins.
Chambers ..... 5 ft.
Offices ..... 6 ft.
Corridors ..... 6 ft. 3 ins.
Height of switches (unless otherwise specified) ..... 4 ft.

To Pantry
3-Way Switch Outlet for lighting Fixture B in Pantry
3-Way Switch Outlet for lighting Fixture A
Bracket Outlet for 2 Incandescent Lamps 50 Watt each equivalent
See B
Special Floor Outlet for Electric Cooking Toaster, Egg Boiler, Chafing Dish, Percolator
Serving
Outlet for Elec. Serving Tray, Drink Mixer
Table
Table Bell Push to Kitchen Annunciator
Ceiling Outlet for 4 Incandescent Lamps 50 Watt each equivalent
DINING ROOM
Special Outlet for Heater, Fan, Vacuum Cleaner, etc.
3-Way Switch Outlet for lighting Fixture A
Push to Annunciator in Kitchen

IN DINING ROOM


See B
Outlet for Desk Lamp
MASTER BED ROOM
Interior Telephone
Public Telephone Extension
Outlet for Ozonizer, Vibrator, Vacuum Cleaner
Ceiling Outlet for Closet Lamp
Bracket Outlet for 2 Incandescent Lamps 50 Watt each equivalent
Special Heating Outlet for Water Heater, Heating Pad, Radiator
CLOSET
S.P.Switch for lighting Closet Lamp
Push to Bell in Servants' Quarters
Master Switch
Outlet for Bed Heating Lamp
3-Way Switch for lighting Fixture B from either Side of Entrance

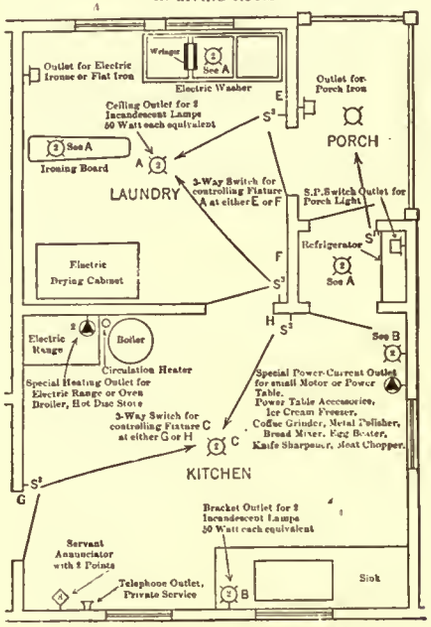
IN MASTER BEDROOM


3-Way Switch for lighting Fixture B
Dish Washer
Outlet for Dish Washer
PANTRY
Outlet for Water Sterilizer
Ceiling Outlet for 2 Incandescent Lamps 50 Watt each equivalent
Outlet for Plate Oven, Hot Disc Store
Plate Oven
Hot Disc Store
2-Way Switch for lighting Fixture B
To Dining Room
Push to Kitchen Annunciator
Special Heating Outlet for Hot Water Heater, Bath Room Heater
S.P.Switch for lighting Fixture A
BATH ROOM
Ceiling Outlet for 2 Incandescent Lamps 50 Watt each equivalent
Bracket Outlet for 2 Incandescent Lamps 50 Watt each equivalent
Outlet for Vibrator, Hair Dryer, Shaving Mirror, Electric Bath Cabinet

IN PANTRY AND BATHROOM

Outlet for Piano Player, Vacuum Cleaner
Bracket Outlet for 2 Incandescent Lamps 50 Watt each equivalent
See B
Special Floor Outlet for Heating and Cooking
Table Bell Push to Kitchen Annunciator
LIVING ROOM
Outlet for Moving Picture Lamp, Tea Table, Teacup, Tea Pot, Coffee Percolator
Ceiling Outlet for 4 Incandescent Lamps 50 Watt each equivalent
Outlets for Candelabras
Outlet for Fan, Cigar Lighter, Portable Lamp, etc.
3-Way Switch for lighting Fixture A from either Side of Entrance

IN LIVING ROOM


Outlet for Electric Ironne or Flat Iron
Wringer
Electric Washer
See A
Outlet for Porch Iron
Ceiling Outlet for 2 Incandescent Lamps 50 Watt each equivalent
See A
Ironing Board
LAUNDRY
3-Way Switch for controlling Fixture A at either E or F
PORCH
S.P.Switch Outlet for Porch Light
Refrigerator
Electric Drying Cabinet
Electric Range
Boiler
Circulation Heater
Special Heating Outlet for Electric Range or Oven Broiler, Hot Disc Stove
Special Power Current Outlet for small Motor or Power Table. Power Table Accessories, Ice Cream Freezer, Coffee Grinder, Metal Polisher, Bread Mixer, Egg Beater, Knife Sharpener, Meat Chopper.
3-Way Switch for controlling Fixture C at either G or H
KITCHEN
Bracket Outlet for 2 Incandescent Lamps 50 Watt each equivalent
Servant Annunciator with 2 Points
Telephone Outlet, Private Service
Sink

IN LAUNDRY, KITCHEN AND ON PORCH

DIAGRAMS BY PERMISSION OF CUSHING'S STANDARD WIRING.

STANDARD SYMBOLS FOR WIRING PLANS

- Ceiling outlet; electric only. Numeral in center indicates number of standard 16-c. p. incandescent lamps.
- Ceiling outlet; combination. ½ indicates 4 16-c. p. standard incandescent lamps and 2 gas burners. If gas only.
- Bracket outlet; electric only. Numeral in center indicates number of standard 16-c. p. incandescent lamps.
- Bracket outlet; combination. ½ indicates 4 16-c. p. standard incandescent lamps and 2 gas burners. If gas only.
- Wall or baseboard receptacle outlet. Numeral in center indicates number of standard 16-c. p. incandescent lamps.
- Floor outlet. Numeral in center indicates number of standard 16-c. p. incandescent lamps.
- Outlet for outdoor standard or pedestal; electric only. Numeral indicates number of standard 16-c. p. lamps.
- Outlet for outdoor standard or pedestal; combination. ½ indicates 6 16-c. p. standard incandescent lamps; 6 gas burners.
- Drop cord outlet.
- One light outlet, for lamp receptacle.
- Arc lamp outlet.
- Special outlet for lighting, heating and power current, as described in specifications.
- Ceiling fan outlet.
- S. P. switch outlet.
- D. P. switch outlet.
- 3-way switch outlet.
- 4-way switch outlet.
- Automatic door switch outlet.
- Electrolier switch outlet.

Show as many symbols as there are switches. Or in case of a very large group of switches, indicate number of switches by a Roman numeral, thus: S^{XII}, meaning 12 single pole switches. Describe type of switch in specifications, that is, flush or surface push button or snap.

- Meter outlet.
- Distribution panel.
- Junction or pull box.
- Motor outlet. Numeral in center indicates horsepower
- Motor control outlet.
- Transformer.
- Main or feeder run concealed under floor.
- Main or feeder run concealed under floor above.
- Main or feeder run exposed.
- Brand circuit run concealed under floor.
- Brand circuit run concealed under floor above.
- Brand circuit run exposed.
- Pole line.
- Riser.
- Telephone outlet; private service.
- Telephone outlet; public service.
- Bell outlet.
- Buzzer outlet.
- Push button outlet. Numeral indicates number of pushes.
- Annunciator. Numeral indicates number of points.
- Speaking tube.
- Watchman clock outlet.
- Watchman station outlet.
- Master time clock outlet.
- Secondary time clock outlet.
- Door opener.
- Special outlet; for signal systems, as described in specifications.
- Battery outlet.
- Circuit for clock, telephone, bell or other service, run under floor, concealed. Kind of service wanted ascertained by symbol to which line connects.
- Circuit for clock, telephone, bell or other service, run under floor above, concealed. Kind of service wanted ascertained by symbol to which line connects.

NOTE.—If other than standard 16-c. p. incandescent lamps are desired, specifications should describe capacity of lamp to be used.

DINING-ROOM.

his enthusiasm had worn away and he had become a mere technician.

The architect comes in contact with electricity, as every modern building must be equipped for electric lighting at least; but as a rule he looks upon it merely as a technical subject which he must refer to an engineer to settle for him, and the interest which he undoubtedly would feel for the tremendous possibilities of making his building more habitable and artistic through the means of electricity is lost because of his impatience with all things mechanical. Certain

Night view of choir and sanctuary, Cathedral, St. John the Divine, New York.

writers for electrical magazines attempt to obtain the architect's interest through articles showing wiring diagrams, wiring symbols, and such technical data as may make the architect's task of selecting the proper appliance and making the proper drawing less difficult. Such methods, however, have failed to arouse any particular interest in the minds of an architect who is essentially an artist. The wiring diagram is to him another technical matter and devoid of interest.

It seems a pity, however, that the architect cannot grasp the modern wonders which electricity accomplishes. Turn aside from technical matters and look for a moment at the interesting things accomplished by electricity.

Not long ago one would have imagined it possible only in such weird tales as those of the Arabian Nights that a room could be flooded with light at the mere touch of a finger, with no lighting fixtures of any kind apparent to the eye. Indirect lighting, to be sure, is nothing new and presents little novelty, and yet this mere accomplishment at one time would have furnished the inspiration for a novel.

Merely by the turn of the wrist, heat is generated, and a whole feast can be prepared without the sight of a flame. This, only a few years ago, was generally considered a marvellous thing, but at present the electric stove, or the samovar, heated by the means of electricity, are a commonplace. In the home one may find even inconspicuous motors which, however, have power to perform work with such lightning speed as was only attributed to the genii of fairy-story days. The difficulty is that the motor has become a commonplace affair and is not looked upon as the wonder-worker which it once appeared to be, but if one can gain the proper perspective he can see that, after all, we have here something which would have been a marvel to our forefathers.

Electricity also affects the actual artistic expression of the architect. When he plans a room, this room should appear to him more than simply a rectangular space allotted to a particular purpose on his plan. If he could feel this room in its three dimensions, he would see it filled by the sunlight in the daytime and lighted by the subdued glow from electric lamps at night. Be he ever so artistic in designing panelling, in studying the scale of his moulding or the proportions of his openings, the entire effect may be spoiled if ugly lighting fixtures are selected or if the fixtures are placed unwisely. Lighting changes the entire atmosphere of a room, and would not the architect rather dream of his room lighted by a warm, subdued, but diffused light than by a hard concentrated glare which will produce ugly shadows never dreamed of when he studied his moulding? Such consideration should enter into the very fundamental scheme of an architect's plan, and his technique should be such that when the room is actually built the entire effect, including lighting, will be considered as a whole.

As the architect schemes out his house, he should see it filled with all the appliances which make life in it the comfortable but complex existence produced by modern civilization. There are almost innumerable electrical appliances which may be used for the comfort and convenience in a house. In the living-room lighting is a most interesting factor to the architect. The lamp on the table, the standard lamp, and the side-lights in the wall panels or near the fireplace are fixtures which are sure to make his room more attractive at night if located and designed properly. There are, of course, many appliances aside from those dealing with lighting which are useful in the living-room. The hostess will find the tea samovar useful, or the owner himself may be pleased to use an electric cigar lighter.

Owing to the modern servant problem it is almost essential to have provision made for a vacuum-cleaning outfit, and there is no question about the fact that in most modern houses electric fans are almost a necessity in the summer time. Provision for all of these fixtures can be made very simply. One floor outlet and possibly two wall or baseboard outlets are all that will be necessary for every-

Knoedler Gallery, New York. Night.

thing except the side lights which would require special outlets properly placed in order that they should fit into the architectural scheme.

The same type of outlets can be used in the dining-room to take care of almost innumerable appliances which the modern housewife finds necessary. There can be used an electric toaster, coffee perculator, grill, egg boiler, vegetable dish, entrée dish, candlesticks for the table at night. The only difference in the type of outlet is that under the dining-room table there should be what is called a "cluster" type of receptacle.

In the kitchen the work becomes more mechanical and this type of appliance is necessary. The dishwasher is now looked upon as a necessity, and a utility motor is of tremendous assistance. It may be even necessary to look upon the refrigerating machine in the future as more of a necessity than a luxury.

Pursuing the mechanical elements to the one room where it is perhaps the most useful, we find in the laundry outlets necessary for a flat-iron, a washing-machine, an ironer, and all the appliances connected therewith. In one section of the basement an outlet should be convenient for ice-cream freezing appliances.

Leaving the mechanical elements and turning to the mere utilitarian side of electricity, in the nursery appliances are now designed for the warming of milk, sterilizing bottles. A luminous radiator would be of unquestionable service on cold days. In the sewing-room a motor is extremely useful as power for driving the sewing-machine. In the bedroom outlets for such appliances as curling-iron, hair-drier, vibrator, boudoir lamp, water heater, etc., are useful and these same appliances can be of use in the bathroom.

Only a few of the actual appliances which the electrician has furnished for us have been outlined above, and for these few that which has to be provided by the architect is of great simplicity. In most cases simply two base outlets or wall outlets will be all that is necessary in a room. In some cases, floor outlets are essential, as in the living-room where it is desirable to have lamps on tables. It is not the difficulty of providing the outlets so much as the necessity of locating them properly which should be emphasized. The proper location of any outlet will always be a source of satisfaction to the owner of a house whereas, an improper location will always be a source of irritation.

Often, too, the owner does not realize that the items which have been referred to do not play very important parts in the architect's scheme for his building, and he will blame an architect more for a poorly located electric outlet than for a poorly designed moulding or badly proportioned opening. This is unjust but true, and it is for this reason that in this article an attempt has been made to emphasize the almost magic-like possibilities of electricity and the interest attached to it in the home.

As art is a true expression of life, and as modern life is not complete without many of the appliances already referred to, is not the conception of the home that includes these devices that give beauty, utility, and comfort not only a practical but an artistic inspiration?

Announcements

Save Us from a Like Fate

In a letter to *The Times* H. Heathcote Statham draws attention to the present danger, which is hardly realized, of having the "sham picturesque" in cottage building inflicted on us. As he says, the old cottages are dear to us from association, and it is rashly supposed by many people that the way to make new cottages picturesque is to build them like the old ones. He and we have seen the effects of this form of superstition both at Letchworth and at Hampstead. At Letchworth the high-roof superstition was so prevalent that over and over again, in going over the first houses erected there, there is scarcely headway up the stairs owing to the "hip" rafters of the roof coming down so low that one has to duck one's head to pass them, and the upstairs rooms are too low against the walls and higher than necessary in the centre, and the slopes of the ceiling were cut into by dormer windows—the most inconvenient form of window internally, however "picturesque" they may look externally. At Hampstead many of the windows are too small; in this climate small windows are not hygienic. In many of the kitchen living-rooms the fireplace to be used for cooking has the light on the wrong side, owing to faulty planning. A left-hand light is required for a cooking range, otherwise the operator is always in her own light. It is obvious that in both these "garden cities" the objective was more picturesque than practical, and that is an essentially wrong basis to start on. Mr. Statham's concluding advice is excellent: "Build as well as possible in regard to convenience and right use of material, and the picturesque will create itself in time. You cannot force it artificially."

Building News, London.

P. Tillion & Sons, architects, announce the return of Philip G. Tillion from duty with the A. E. F., attached to the 34th Engineers, Clement V. Tillion having previously arrived after service with the 106th Infantry.

Every architect will find valuable practical information presented in a most attractive manner in a volume recently published on "Lighting from Concealed Sources; A Practical Treatment of Lighting Problems to Obtain Satisfying Illumination and Individual Effects Without Exposed Light Sources," by the Engineering Department (J. L. Stair, Chief Engineer) of the National X-Ray Reflector Company, New York and Chicago.

Charles W. Attwood and Ernest H. Trysell, architects and engineers, beg to announce that they have opened offices at 603 Temple Building, Detroit, Mich. The partnership will be conducted under the name of Attwood & Trysell. They will be glad to receive catalogues from manufacturers.

Old House Mottoes

We are in receipt of an attractively printed booklet from the Western Brick Co., Danville, Ill., with the above title, containing many quaint old-time mottoes that have been associated with homes. "The walls of Old-World castles, palaces, manses, abbeys, and cottages afford a wealth of verses."

"Hail, Guest! We ask not what thou art:
If friend, we greet thee, hand and heart;
If stranger, such no longer be;
If foe, our love shall conquer thee."

GARDEN SIDE.

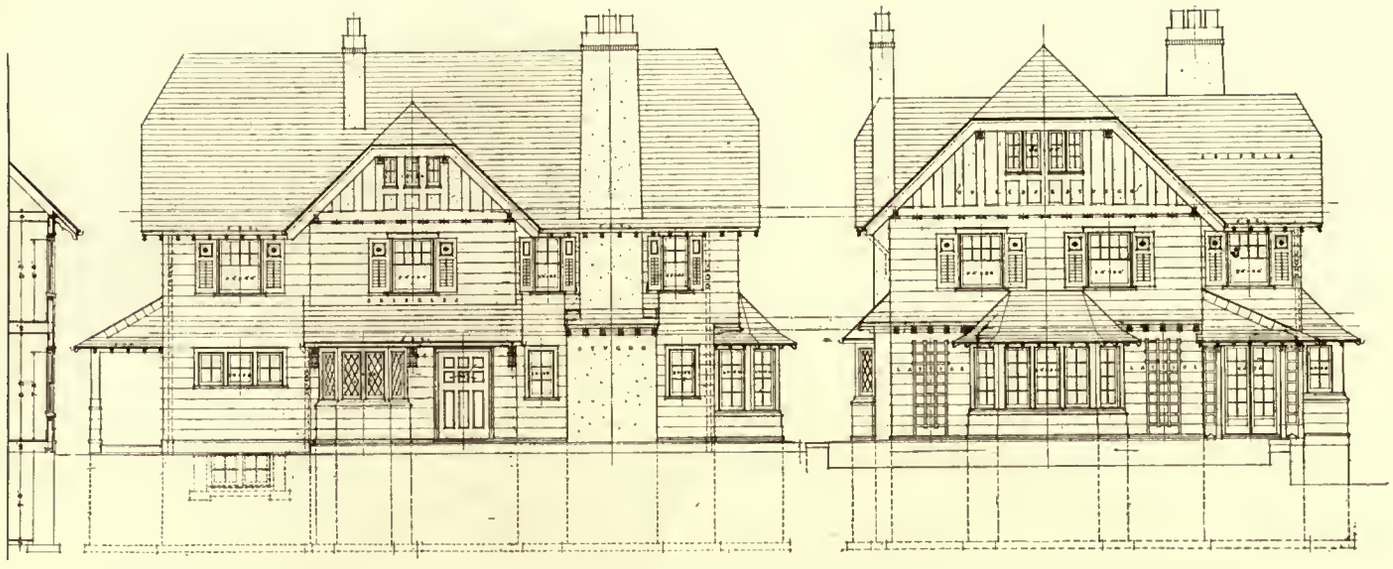
LIVING–ROOM.

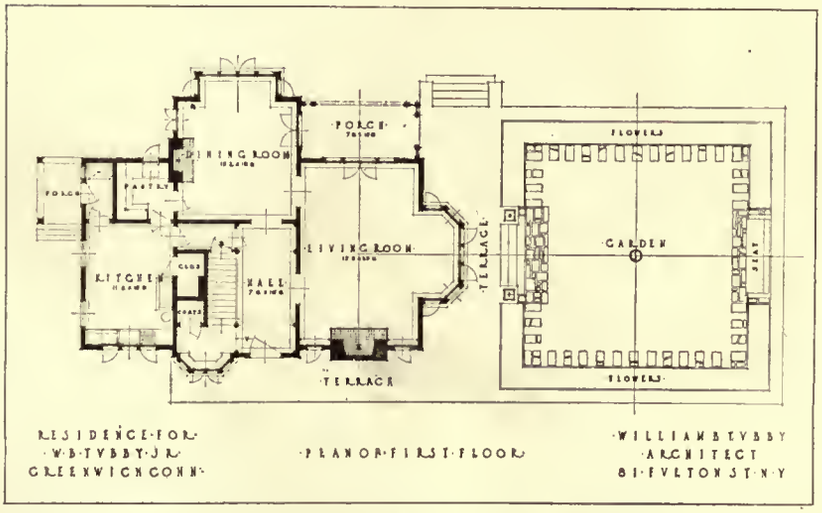
Wm B. Tubby, Architect.

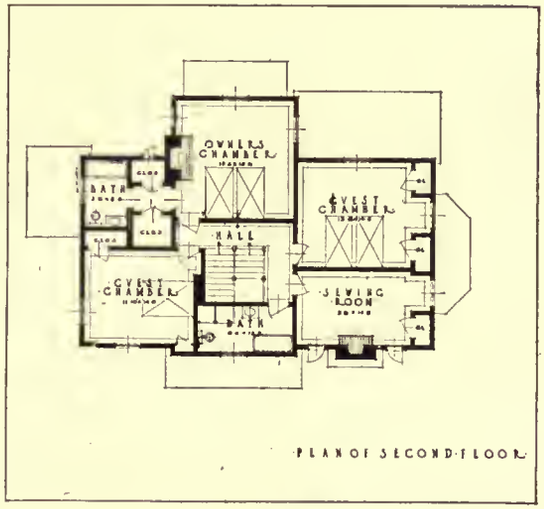
HOUSE, W. B. TUBBY, JR., GREENWICH, CONN.

HOUSE, W. B. TUBBY, JR., GREENWICH, CONN.

Wm. B. Tubby, Architect.







PLANS AND ELEVATIONS, HOUSE, W. B. TUBBY, JR., GREENWICH, CONN. Wm. B. Tubby, Architect.

Some Comments on Housing Conditions

Housing in Philadelphia Since the Armistice

From John Ihlder, Secretary, Philadelphia Housing Association

During the war Philadelphia faced the most critical housing situation in its history. The entrance of the greatest shipbuilding and munitions district in the country, its industrial population increased by leaps and bounds. First came the great negro migration of 1917, which swamped the sections inhabited by colored people. Then came an equally great though not as spectacular a migration of white workers. To meet the negro migration the Philadelphia Housing Association, organized a Negro Migration Committee, composed of all the organizations which have to do with the welfare of negroes, either as the whole or as part of their work. It also persuaded house owners whose property lay on the outskirts of negro districts, to take colored tenants when white tenants moved out. In this way the pressure was very considerably relieved, and after the first few weeks there was little illegal room overcrowding, though many single-family houses were, and still are, occupied by two or more families. The Migration Committee continued its work until well along in the summer, when the influx of negroes began to subside.

Then began the influx of white laborers. At that time Philadelphia had a large number of vacant houses, except in the negro districts, though a considerable proportion of them were out of repair. Steadily and swiftly these vacant houses were occupied by new comers, until by the end of September in those parts of the city accessible to the chief industrial districts, all that were fit for human occupancy were occupied; even vacant-room signs disappeared from windows. Cramp's Shipyard was fortunately located from the housing point of view, and apparently suffered least; but the New York Shipbuilding Company and others in September appealed to the Housing Association for aid in finding quarters for their new employees. The association, after studying the situation, advised the company to buy acreage near its yard and build dwellings. It did buy this land, and later the Emergency Fleet Corporation built there the town of Yorkship. Soon afterward the Hog Island Shipyard was begun, and the Housing Association was appealed to to find dwellings for the expected 30,000 employees. When it presented the facts, the Hog Island management employed a large force of canvassers, who went through the city, street by street, asking householders as a patriotic duty to take in Hog Island lodgers.

The Housing Association then called the attention of the Council of National Defense at Washington to the situation, and urged that the government erect houses, as the speculative builders by this time had practically ceased operation, and money, materials, and labor were almost unobtainable. At the request of various government departments, the association made investigations, not only in the city, but in towns and villages for twenty miles outside, and submitted reports. It held conferences of local builders, officials, and bankers. It sent representatives to appear before Congress. Meanwhile other industrial districts had begun to feel the housing shortage keenly, and national organizations like the National Housing Association had taken the matter up.

The story of the government's procrastination is an old one. It finally responded to all this pressure so late that only a fraction of the needed dwellings were completed when the armistice was signed. Nevertheless, its activities during the latter half of 1918 had much to do with maintaining the morale of the workers until the influenza epidemic checked operation in shipyards and munition plants to an extent that would have been disastrous had the war been at a critical stage instead of being almost over. Philadelphia, overcrowded as never before, had a higher death rate than any other American city. The story of those weeks in October, 1918, reads like a story of the black death in the Middle Ages.

Not only were houses overcrowded, but unfit houses—houses that had stood vacant for years because of their condition, were occupied, and houses that had been kept in fair repair before were permitted to run down because materials and labor were scarce and costly, and because landlords were able to get tenants at high rents almost regardless of the condition of the dwelling. Meanwhile, the Health Department, having lost some of its best men to federal services, let down in the enforcement of legal standards.

Philadelphia, therefore, began the new era of peace under a serious housing handicap. It had, however, three reasons to hope for improvement in the near future:

1. The government houses were being completed. More than half of the government's appropriations for house-building were assigned to the Philadelphia district, and as a result some 5,000 to 6,000 dwellings, of which nearly 2,000 were within the city limits, would be added to the available supply. But with the signing of the armistice work on these slowed down; a few were abandoned. A considerable proportion even to-day are not completed. In December the Senate caused discouragement by ordering that work on all dwellings of the U. S. Housing Corporation not 75 per cent completed should stop. National and local organizations secured a hearing when this resolution reached the House. The Housing Association represented Philadelphia at this hearing, where the resolution was reversed and work permitted to continue.

2. The let down from the feverish activity of the war promised a diminution of population. While there was a considerable let down, and thousands of workers went back to their former homes, many of the industries continued to operate on an unexpectedly large scale, and some of the shipyards even increased their forces. During succeeding months, however, there has been a considerable diminution of pressure of population, due to various causes, among which one of increasing importance is the return of aliens to their native lands. While returning soldiers have, to a great extent, made up for this, and there is at present a noticeable amount of unemployment, the prospect seems to be that there will be a labor shortage before the year is out. Then the lack of an adequate supply of good dwellings will assume a new practical importance in the eyes of those who wish to hold labor here.

3. The expectation that with the cessation of war demands building operations would boom. This proved illusory for months, until the building season was well advanced, for several reasons:

The high price of materials and the apprehension that this price would soon go down. Incidentally, this led the trust companies to adopt a very conservative policy in their building loans, and so prevented an adequate supply of capital being available.

The lack of public improvements, as sewer and water extension, which had been held up during the war, and which the city was financially unable to push with vigor until a large bond issue was authorized. This was not done until July, 1919.

The diversion to interest from house-building to house-buying under the "Own Your Home" campaign. Money that should have gone into the building of new houses went into the purchase of old houses at inflated prices. The supply of houses being inadequate to the need, people became panicky and bought irrespective of value to get some shelter. Tenants of many years standing were forced out by new owners, who had bought as the only means of getting a roof over their heads. The Housing Association had instances of as many as six families in a row pushing each other out. When a break occurred in such a line there was tragedy. Storage warehouses were filled to overflowing, owners of moving vans made small fortunes. And week by week rents and prices went up. Speculators came in, bought options on groups of houses, raised the rents, and sold the options at an advance.

During the war the Housing Association, whose secretary was the Philadelphia representative of the U. S. Housing Corporation, had co-operated with the local Fuel Administration in checking profiteering. The method was to notify an owner that unless he signed a lease until April 1, 1919, at a fair rental, no coal would be delivered at that house. This proved quite effective. But with the signing of the armistice the Fuel Administration ceased its activities. The Housing Association had co-operated in drafting two federal bills aimed at rent profiteering, and had become convinced that even with war powers such legislation is impracticable unless we are to change our whole theory of property. When, therefore, the post-war profiteering, coincident with the "Own Your Home" campaign, caused widespread unrest and the formation of Tenants' Protective Leagues in all parts of the city, the association was unable to advise the latter to seek relief in this way. They did introduce several bills, none of which were enacted, and they brought cases before the courts which were consistently decided in favor of the landlords. The leagues, are, however, growing in number, and if they are unselfishly and ably managed, may become a factor of importance.

The Housing Association, convinced that the only relief, when there are more families than there are houses to shelter those families, lies in securing more houses, has devoted most of its energies to stimulating building. It consistently advocated those items in the bond issue which provide for sewers, water-mains, and paving. It has urged the tenants' leagues to unite their strength in a building campaign, and people of means to form stock companies. These proposals are meeting with increasing favor, and, unless the continued rise in cost of materials discourages building again, promise to result in operations on a large scale. Meanwhile the building "boom," which gathered some momentum in the latter part of the spring, when people became convinced that prices would not go down in the immediate future, seems to be slowing up, partly because of a growing belief that manufacturers and other producers of materials are creating artificially high prices.

In the city government there are signs of renewed vitality. As a result of meetings addressed by the secretary of the Housing Association, there was formed a Churchwomen's Housing Committee, representative of all the churches, under the chairmanship of Mrs. W. D. Abbey, who has long been interested in improving conditions. Members of this committee accompanied inspectors of the Housing Association on their routes, and became so aroused over what they saw that they went in a body with representatives of the association to the Director of Public Health, in whose department is the Division of Housing and Sanitation, and asked him to answer a series of written questions designed to bring out the reasons why the division has not done more effective work. The director asked for time in order that he might make "careful and sagacious" reply. At the end of two weeks the Housing Association secured another appointment, at which the director presented a long written reply which, on analysis proved wholly unsatisfactory. He was, therefore, asked to reply again. His response was to ask the City Councils to appropriate $50,000 additional for the abatement of nuisances, to increase the salary of the Chief of the Division of Housing and Sanitation from $3,100 to $4,000, and to increase the number of inspectors. He then asked the association and the Churchwomen's Committee to aid in getting these through. Councils passed all except the $50,000, which they cut to $25,000, and the mayor then vetoed the additional inspectors, despite the fact they had been asked for by a member of his own cabinet.

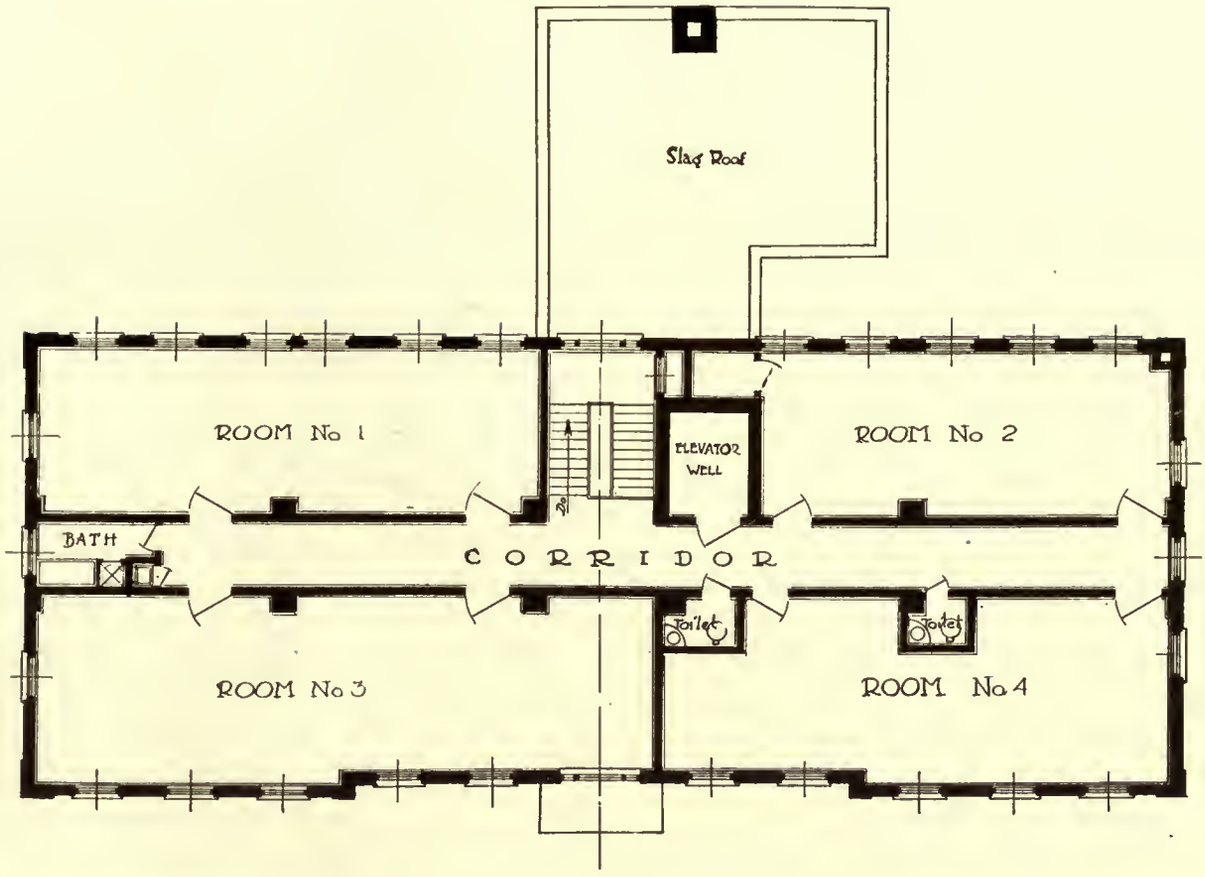
The increase in salary of the chief was due to inability to get competent candidates for the position. When the former chief resigned in February, 1918, the Housing Association asked that an examination to qualify his successor be held promptly. This was, however, postponed until spring, when, at the request of the Civil Service Commission, the Housing Association nominated the examining board. None of the candidates passed. The Housing Association asked that another examination be held at once so that the new chief might begin a vigorous campaign to correct unsanitary conditions that were already increasing at a rate doubly menacing because of the house overcrowding. After hesitation the department decided to postpone the examination until fall. Then it postponed it again until November. Meantime the influenza epidemic visited Philadelphia and the armistice was signed. When the date for the examination came there were only three or four candidates. The Civil Service Commission therefore asked if the Housing Association would approve of a further postponement. This was agreed to on the score that by January or February many of our troops would be back from Europe, and among them there probably would be available candidates. The date was not set again until May, however, when the Housing Association again nominated the examining board. Again there were only three or four candidates. Then, at a conference between the mayor, the director of public health, and the Housing Association it was agreed that the salary should be raised to $4,000, and the examination once more postponed. The association wrote to every organization likely to contain available men in its membership, urging that these men come out. When the examination was finally held on June 25, there were seventeen candidates, five of whom passed. Two were in the federal service, one, Arthur E. Buchholtz, was head of the Housing Section of the Division. Lieutenant George H. Shaw, recently in the Health and Housing Section of the Emergency Fleet Corporation, stood at the head of the list, and was appointed to take office August 5.

So in spite of the fact that we are at the beginning of a municipal election campaign which promises to be most bitterly fought because the office-holders elected in November will inaugurate a government under our new charter, there has been enough constructive interest in housing to give it a promising future.

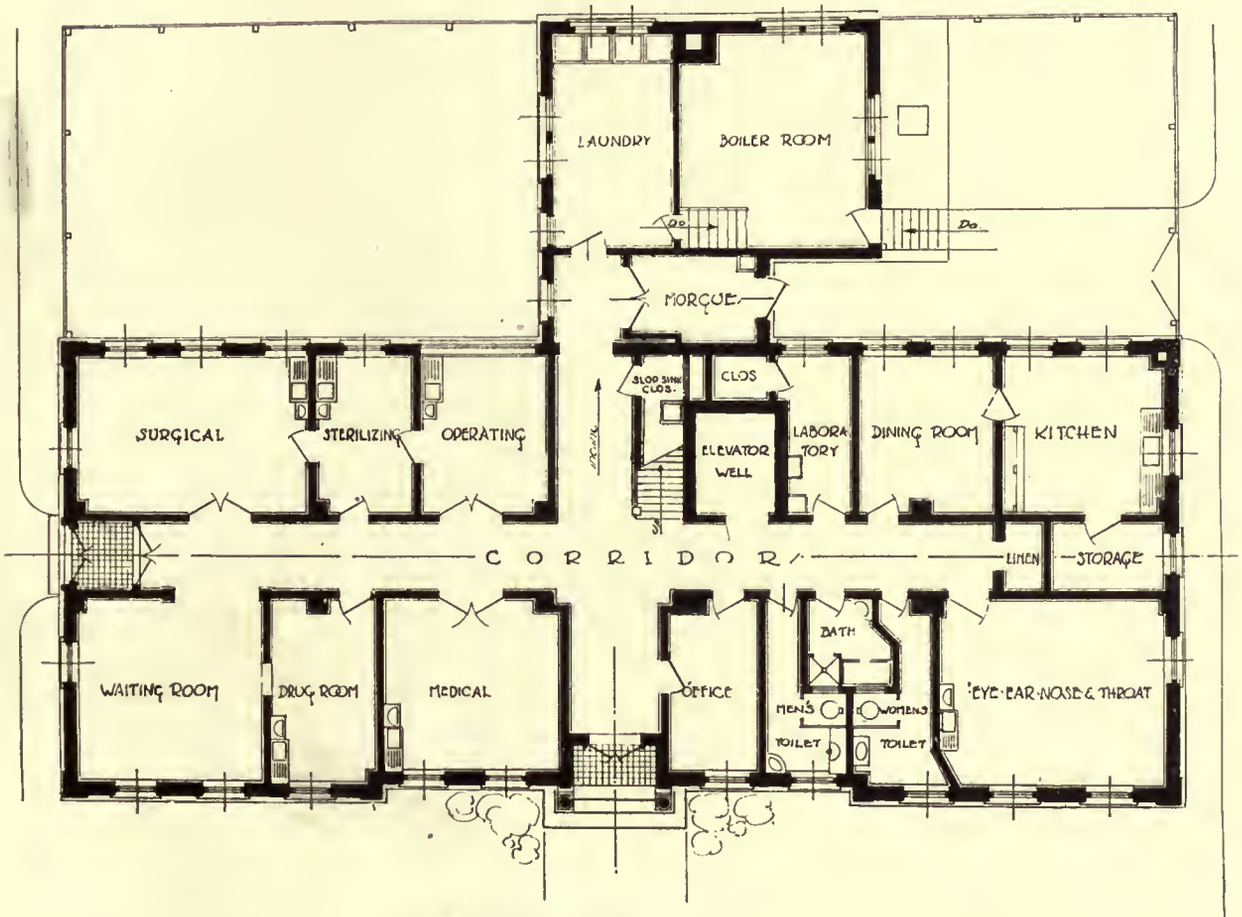
(*Continued on page 260*)

NORTHEASTERN HOSPITAL, PHILADELPHIA, PA.

Ballinger & Perrot, Architects.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

NORTHEASTERN HOSPITAL, PHILADELPHIA, PA. Ballinger & Perrot, Architects.

(*Continued from page 257*)

From Richards, McCarty & Bulford, Architects Columbus, Ohio

For the last year there has been a marked shortage in residences and apartments in Columbus, Ohio, and at the present rate of construction such shortage will continue for some time to come. There is considerable building going on in this line, but there is a great shortage of labor in the building trades, and the price of building materials and of labor is going higher all the time.

Clients are continually asking our advice as to what to do in regard to building, that is, whether to build now or wait for a slump in the market. We are neither prophets, nor sons of prophets, and therefore refuse to predict what is likely to happen within the next few months, or even years, but it looks to us as though investment building would be rather slow unless there is somewhat of a reduction in the prices, or at least until the investors become thoroughly convinced that buildings constructed on the present market will not be compelled to come into competition within a few years with newer structures built at a much lower price.

Even home builders are hesitating about investing the amount of money required for their own homes on this market.

From Louis Lott, Dayton, Ohio

Before the close of the war, housing conditions in Dayton were such, that people working in Dayton lived as far as twenty miles away, which is an unheard of condition for small towns. A great many men could not bring their families here. I have heard of cases where people lived in bathrooms, etc., all of which, of course, caused a considerable labor turn-over.

Since the manufacturing of war materials has ceased, there has been a considerable exodus of employees. However, conditions are still such that there are practically no vacant houses, and as a matter of fact a great many people have been compelled to buy a property in order to have a place to live.

Recently a committee has been formed in the Dayton Chamber of Commerce for the purpose of furthering an "Own Your Own Home" campaign. However, the committee finds that with the available building trades supply of men, almost all contractors will be busy to their capacity for the next few months at least. Furthermore, there are some other interests and questions involved in such a campaign, so that it has been found advisable by the committee to exercise a moderate amount of publicity upon the subject for the time being, before taking this matter up in a whirlwind fashion. I should mention that the members of the local chapter of the American Institute of Architects at a recent meeting have agreed to contribute at least one set of plans for the benefit of the individual small house owner, which modest contribution may do some good.

There are hundreds of houses being erected at this time, but these are all of the contractor and realty companies type of design and architecture, that are so ruinous to the looks of the newly built-up sections in all of our American cities.

I have been working very hard in order to create local interest for a better class of design and more comprehensive planning in cheaper houses; however all that I have accomplished to date, is the sinking of several thousand dollars and very much effort of my own into this question, with nothing to show for my trouble excepting a stack of drawings and sketches.

From Clyde N. Friz, Baltimore, Md.

I may say, however, that the local conditions are very bad. At present, an intelligent effort is being made to improve them, and if allowed to develop along sane lines, doubtless will accomplish the result in a very short period.

Our chief difficulty here seems to be, as I assume elsewhere, the misguided efforts of hair-brained politicians, and incompetent building speculators. We hope to overcome the handicap of both and win out.

Art as an Educator—the Pageant to Help Make Better Americans

Utilizing the pageant as a means for carrying out an Americanization programme forms the theme discussed by Miss Hazel McKaye in an article written especially for "Americanization." Miss McKaye is director of the department of pageantry and the drama, national board, Young Women's Christian Association.

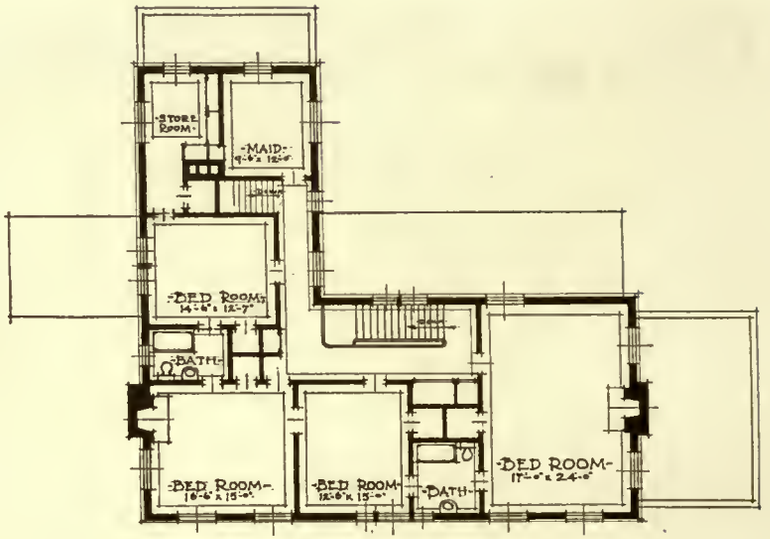
It is in the opportunities which it offers for bringing that which lies in the past into the vividness of the present, and in interpreting the problems of to-day so as to interest great numbers, that pageantry takes a foremost place in any Americanization programme.

The whole of "Americanization" does not by any means lie in that which this country gives to the foreign born. The richness of the art development of civilizations older than our own is the contribution—a great abundant gift—which the immigrant brings to America. This great heritage of art, however, needs to be expressed before it actually can be said to belong to us. Pageantry, therefore, is perhaps the best possible way to make this gift truly our own, since pageantry includes all the arts. The spoken word, pantomime, music, the dance, painting, design, and even sculpture all are harmonized in this great art of community drama.

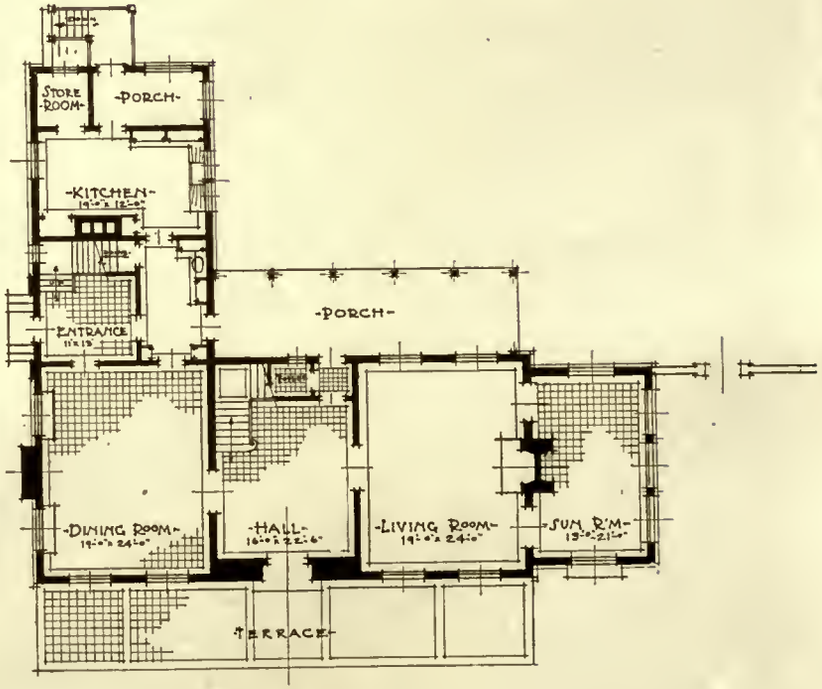
Apart from its usefulness as a means of interpreting the art of the old world, community drama offers a most interesting means of teaching the English language. The Army discovered this fact early in its efforts to teach English to enlisted men of foreign birth. And then it further discovered that the non-English-speaking foreigner was accustomed to taking part in some of the very best drama in the world. The working-man's theatre, promised for our immediate future, is a long-established fact in Europe, where both amateur and professional productions are truly of and for and by the people.

RESIDENCE, ALEXANDER BONNYMAN, KNOXVILLE, TENN. Barber & McMurry, Architects.

FRONT ENTRANCE, HOUSE, ALEXANDER BONNYMAN, KNOXVILLE, TENN.



-SECOND FLOOR PLAN-



-FIRST FLOOR PLAN-

Barber & McMurry, Architects.

LIVING-ROOM, LOOKING TOWARD HALL.

LIVING-ROOM, FROM HALL.

HOUSE, ALEXANDER BONNYMAN, KNOXVILLE, TENN.

Barber & McMurry, Architects.

Modern Building Superintendence

By David B. Emerson

CHAPTER I

INTRODUCTORY

NEARLY forty years have elapsed since the late Professor Theodore M. Clark wrote his very instructive and interesting work on building superintendence. Those years have been very fruitful ones, producing many new materials and methods in building construction, so that Professor Clark's work is now very much out of date. Tall buildings, skeleton construction, steel beams, reinforced concrete, American Portland cement, membrane waterproofing, open plumbing, electric lighting, and vacuum cleaning systems have all been invented since that time, or were then in a nascent stage. With all of these and many other new developments have naturally come many new methods of construction suited to the new materials. So it is not the intention on the part of the author of these articles to throw any discredit whatsoever upon Professor Clark's work, but rather to write as Clark might have written had his work been done in 1919 instead of in the early eighties. The building of which we propose to follow the construction will be a large modern office building, to be built in a thriving city of two hundred and fifty thousand population, by the local multi-millionaire, who wishes to perpetuate his name and fame in the community where he has amassed his wealth, also to have a good paying investment. The size of the building will be about one hundred and fifty feet by two hundred feet, twenty stories high, three sides will face upon streets. As the building is to be retained as a permanent investment, it will be constructed in the best manner possible, equal in every particular to the best class of office buildings in New York or Chicago. The first floor will provide quarters for a bank and trust company, of which the owner is president and a principal stockholder. The remainder of the first floor will be used as brokers' offices. Part of the basement will be occupied by the safe-deposit department of the bank, and the remainder will be fitted up as a high-class barber shop and an up-to-date Turkish bath establishment, equipped with a small swimming-pool. The heating apparatus, all pumps and machinery will be located in the sub-basement, which will be under only a part of the building. The upper stories will be devoted entirely to rented offices. The building will be of first-class fireproof construction. The lower three stories will be faced with Indiana oolitic limestone, with a base course of granite. The basement and sub-basement walls, rear wall, and the backing up of all stone-work up to the level of the second floor, will be of brick, above that the backing of all brick, stone, and terra-cotta will be of hollow tile, eight inches thick, with header tile for bonding to facing. Walls above third story faced with brick, window-sills, lintels, bell courses, cornice and other trim of terra-cotta. Floor slabs will be of reinforced concrete. Partitions, except where special conditions exist, will be of hollow terra-cotta block. The window frames and sash in first story street fronts will be of cast bronze, of special design, frames and sash in the upper stories will be copper kalameined. Roof will be covered with flat tile roofing. Main entrance will have bronze covered revolving doors. Vestibules and corridors in first story will have marble floors and wainscot; corridors in upper stories will have mosaic floors, and marble wainscot. Staircases will be of ornamental cast-iron, with marble treads. Elevator enclosures will be of ornamental iron glazed with wired polished plate-glass, doors to be hung on ball-bearing hangers and provided with improved type of operating devices. All doors and trim throughout the offices will be of hollow metal, enamelled. The office floors will be of cement, hardened and colored. Toilet-rooms will have tile floors and structural glass wainscot and stalls. The banking-rooms will be wainscotted with marble, counters and screens will be of marble and bronze of an ornate character. Ceiling of the main banking-room will have ornamental beams and coffers of plaster. The bank vault and safe-deposit vault will be of the most modern and improved type of fire and burglar-proof construction. Directors' room and president's room will be elaborately panelled and wainscotted in hard wood, and will have marble mantels, oak floors, and ornamental plaster ceilings. The Turkish bath in the basement will be fitted up with structural glass wainscot and rubbing slabs. The swimming-tank will be lined with enamelled brick, and be equipped with formed gutters, life-rail, etc. The plumbing throughout the building will be of the best type, hot-water supply and filtered ice-water supply to all offices. Heating will be done by a vacuum system. The building will be equipped with a complete vacuum-cleaning system. The passenger elevators will be of the gearless traction type; freight elevator and sidewalk elevator to sub-basement will also be provided. A more complete and detailed description of the materials and construction of the building will be given as the work progresses. The lot is practically level, and the old buildings which formerly occupied the site have been removed. Borings have been taken, and the quality of the soil and sub-soil have been pretty well determined. It has been found by the tests that about three-quarters of the building will set upon good sound soil, having a bearing capacity of from four to six tons per square foot, but it was also found that one corner would set on the bed of an old stream, and that the soil was particularly bad and would necessitate piling.

The lines and levels have been properly established by a surveyor as called for in the specifications, and everything is now ready to commence excavation.

(To be continued.)

The United States Housing Corporation

ON March 1, 1918, Congress authorized the United States Shipping Board to spend $50,000,000 from its general appropriation to provide houses for ship workers as a necessary part of the expense of building ships. At first the Shipping Board made use of Mr. Eidlitz's personnel in an advisory capacity; later the Shipping Board established a housing organization of its own. In the meantime Mr. Eidlitz and his collaborators, receiving money for essential expenses from the President's emergency fund and also from the navy, had determined on a tentative scheme of procedure, had investigated some of the most pressing housing-shortage situations, and had prepared as far as possible to facilitate the work of whoever should be finally designated to deal with the government's housing problem.

On June 18 the President delegated to the Secretary of Labor the authority given him by Congress on May 16 to expend $60,000,000 (appropriated June 4, raised to $100,000,000 July 8) "for the purpose of providing housing, local transportation, and other general community utilities for such industrial workers as are engaged in arsenals and navy-yards of the United States and industries connected with and essential to the national defense, and their families . . . only during the continuation of the existing war."

By executive order, confirmed in the act of June 4, 1918, the Bureau of Industrial Housing and Transportation was created in the Department of Labor, and Mr. Eidlitz was appointed director.

On July 25, 1918, the United States Housing Corporation, created as an executive agent of the Housing Bureau, was first authorized to expend these funds for actual acquirement of land and for construction.

Much of the procedure of the corporation was worked out as we went along, and came to its full form only after some time, which we believe made it better for its purpose. There were occasional misunderstandings, conflicts of authority, and duplication of fields of work, but on the whole one of the most striking accomplishments of the corporation was that through a necessarily complicated co-operation of many hundreds of people who, for the most part, had never worked together before, with almost no delay due to personal friction it produced in 109 days, from July 25, 1918, to November 11, 1918, completely worked-out plans and specifications for 83 projects, for 60 of which, involving an estimated expenditure by the Housing Corporation of $63,481,146.65, construction contracts had already been let on November 11.

With the signing of the armistice the whole outlook of the Housing Corporation changed. In a considerable number of projects the demand for houses would persist after the war. When this was the case and we were already well along in construction it would save money to go on and complete the houses for rent or sale. In some projects, however, the demand for houses would cease with the war and on all these work was promptly stopped. In such places we had usually planned temporary houses, knowing that they must ultimately be scrapped. In many other projects we had not proceeded far with our construction, and it saved money to stop, scrap what we had done and take our loss, rather than to go on and try to get back from sales or rent after the war the cost of houses built at the abnormally high prices of war times. How far this stopping of house building was desirable in a broad way, in towns which still very much needed houses, is another question; but it should not be forgotten that the Bureau of Industrial Housing was created and organized to meet a war emergency, not to solve the general problem of industrial housing in the United States, however desirable this latter result may be.

AFTER THE ARMISTICE

The United States Housing Corporation, in serving its war purpose, has produced and compiled, as a by-product of its activities, a collection of data which, with the similar material in the hands of the United States Shipping Board, is by far the largest and best-organized collection of information in existence on contemporary American industrial housing, town planning and related matters. This volume of the report of the corporation sets forth in brief compass one aspect of what the corporation has done in a war emergency; but it also calls attention to this collected data, so that the public may have access to it for use in attacking again the housing problem, no less important in the coming times of peace.

DATA COLLECTED —VALUE OF THIS REPORT

A Book of Great Value to Architects

One of the most complete reports on the subject of planning of houses for working men ever issued in this country is that published by the United States Housing Corporation of the Department of Labor.

The report deals exclusively with the architectural, town planning, and engineering divisions of the corporation. It contains 544 pages and more than 200 cuts of house plans and elevations. It also contains the details of the town planning, architectural, and engineering features, and the statistics of 26,000 houses, the number originally planned by the Housing Corporation for war needs.

It contains a description of the architectural features of each of the projects that was planned.

The Architectural Division made a particular study of economical house plans. Detailed attention has been given to the designing of houses costing from $1,800 to $4,000. Many of these plans bring out important economies; yet the houses are most convenient, homelike, and attractive. Particular attention was given to standardizing plans and materials and cutting out of unnecessary fixtures.

In each of the projects only four or five house plans were used. By reversing these plans, by using the same plan in detached and semi-detached houses, by using a pitched roof on one and a gambrel roof on another, by using clapboards on some and shingles or stucco on others, it was possible with these four or five plans to develop a village that had none of the monotony of the typical factory town, but instead one that presented a most pleasant aspect.

The report will be of much practical use to house-building corporations, architects, contractors, manufacturers who are planning to build, and also to real-estate men. It may be obtained of the Superintendent of Documents, Government Printing Office, Washington, D. C., for $1.50.

Trade Names Will Be Forgotten During Metal Lath Week

The members of the Associated Metal Lath Manufacturers have united on a co-operative campaign to promote a more extensive use of metal lath for fire-resistive construction.

The climax of this campaign will be Metal Lath Week, October 6 to 11, 1919, which is coincident with Fire Prevention Week held under the auspices of the National Fire Protection Association, U. S. Department of Commerce, Boards of Fire Underwriters, and other national organizations interested in fire prevention.

During this week all of the member companies of the Associated Metal Lath Manufacturers will instruct their entire sales force and all agents to concentrate on metal lath as a fire-resistive material. Special efforts will be made to link up metal lath with fire prevention in the minds of architects, contractors, dealers, and the general public. Individual brand names will be avoided, and all will work for a more general recognition of the fire-resistive qualities of metal lath.

The Association has arranged with the Society for Fire Resistive Frame Construction to distribute a design for a test house which is published by that society. Efforts will be made to have this house reproduced in as many localities as possible and set fire to on Fire Prevention Day, October 9, which will be Tuesday of Metal Lath Week.

This test house is designed so that one-half is built with the usual wood construction and the other half of fire-resistive frame construction, using metal lath on the inside and metal lath and stucco with a fire-resisting roof outside.

Ballroom, South Shore Country Club, Chicago. Marshall & Fox, Architects.
(See article on "Art and Electricity," page 249.)

It is believed that no more effective method of visualizing to the public the fire-resistive qualities of metal lath could be used than this practical demonstration.

Todhunter Mantels

AN UNUSUAL COLLECTION OF CHOICE DESIGNS OF THE EARLY ENGLISH AND COLONIAL PERIODS IN WOOD AND MARBLE

FIREPLACE ACCESSORIES

ANDIRONS, GRATES, FIREBACKS, FENDERS

Originals and reproductions from interesting originals

Illustrations upon request

DISTINCTIVE METAL WORK

WEATHERVANES
LANTERNS
FOOT SCRAPERS
SCONCES
KNOCKERS
BELL PULLS
CHIMNEY IRONS

In hand forged iron and brass

Reproduction of a fine Queen Anne Chimneypiece removed from an old house near the Guildhall, London, in carved oak.

ARTHUR TODHUNTER, Showroom 101 PARK AVENUE, NEW YORK

THE WHITE HOUSE FROM THE GREEN.

ARCHITECTURE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XL OCTOBER, 1919 No. 4

Theodore Roosevelt's Service to the National Capital

By Charles Moore
Chairman of the Commission of Fine Arts

PRESIDENT ROOSEVELT, with the members of his Cabinet, attended the preliminary view of the Senate Park Commission Plans for the improvement of Washington, at the Corcoran Gallery, on January 15, 1902. The first object that caught his eye was a small model of the proposed treatment of the Washington Monument grounds, which he, with his usual impetuosity, declared to be fussy.

UNION SQUARE.

Thereupon Senator McMillan took him to the large renderings in color, by Charles Graham and Jules Guerin, showing the entire Mall scheme from the Capitol to the Washington Monument, and thence to the Lincoln Memorial, explaining the original plan of L'Enfant and the continuation of it by Messrs. Burnham, McKim, Saint-Gaudens, and Olmsted. When he realized the full import of the great composition, involving the restoration of all those axial relations between Capitol, White House, and Monument, that had been devised under the immediate supervision of Washington and Jefferson, he became enthusiastic over the new plans.

The commission had begun its labors during the administration of President McKinley; and, although Vice-President Roosevelt was President of the Senate when that body authorized one of its committees to have plans prepared, he had no personal knowledge of the work being done until he visited the exhibition. Secretary Root, who had been one of the advisers of the commission, was in hearty accord with the new plans. Secretary Hay approved both the location and the tentative design of the Lincoln Memorial; in fact, placing Lincoln with Washington on the main axis of the composition he regarded as inevitable. Thus fortified by the approval of President Roosevelt and Secretaries Hay and Root, the commission felt that they would have the support of the executive branch of the government.

During the spring of 1902 the Senate passed the McMillan bill, which provided for removing from the Mall the Pennsylvania Railroad tracks and station. This legislation was imperative if the Park Commission plans were to be carried out. In August Senator McMillan died. The House completed the railroad legislation; and there the new plans came to a stop in so far as Congress was concerned. Senators Wetmore and Newlands became the defenders of the plans, and when Mr. Root entered the Senate the three fought some good fights, both in defense of the general scheme and in favor of particular projects; but the plan as a whole found no champion to make an aggressive fight. On the contrary, in both Houses opponents strongly assailed

RESTORATION OF THE STATE DINING HALL OF THE WHITE HOUSE. McKim, Mead & White, Architects.

the members of the commission individually and the plan as well. But this is anticipating.

In the spring of 1902 Senator McMillan secured an appropriation for the thorough reconstruction of the White House, the work to be done entirely as President Roosevelt should direct. Mrs. Roosevelt had sent for Charles McKim to advise her about spending $16,000 on White House repairs. He told her frankly that, considering the condition of the building, the sum named would not make even a beginning. There the matter would have dropped had not Mr. McKim told Senator McMillan of the conversation. The same day the latter prevailed on the Senate Committee on Appropriations to insert an item of $100,000 for repairs, and a further sum for a temporary office building. Owing to Representative Cannon's insistence that the appropriation should be sufficient to put the White House in absolute order, the item was increased to nearly $500,000. The amount was based on estimates made by Mr. McKim and approved by President Roosevelt. During the period from May till December both President and Mrs. Roosevelt gave much time and thought to the restoration of the White House. The work was accomplished in such a manner as to preclude the necessity for change; the building was restored in form to what it was in the days of Thomas Jefferson, and the interior was finished and furnished in a permanent manner. Hangings and decoration have to be renewed from time to time, but any changes would be for the worse. "Fashion" and "style" have been eliminated. "I am a simple man," said President Roosevelt to Mr. McKim, "and I want simplicity in the White House. I don't want extravagance." "Certainly," was the answer, "but you must realize that simplicity is expensive. Pine can be sawed and gilded quite cheaply; but plain surfaces must be thoroughly made."

The fact that the White House is absolutely right is due to the perfect taste and knowledge of Charles McKim, but probably Mr. McKim would not have been selected—certainly his ideas would not have found full and complete realization—had it not been for the understanding and sympathy of the President and Mrs. Roosevelt. Both of them had been familiar with the best things—the suitable things—all their lives.

The former plans for the remodelling of the White House, presented in 1900, were prepared under the direction of an æsthetically minded mistress of the Executive Mansion. They were extravagant and destructive of historic values; they would have made the President's House (as the original name was) into a cross between a railway-station and an exposition building. The American Institute of Architects condemned them vigorously. But the real veto came when Mrs. McKinley told Senator Allison (chairman of the Committee on Appropriations) that "she didn't propose to have any hammering in the White House while she occupied it."

Every architect knows that his battle is won when the mind of the client meets his mind. That was what happened in the case of the Roosevelts and Mr. McKim. Of course there were times when the impulsive President came up against the architect, who stood ready to compromise anything but the essence; but that is another story. And, by the way, it was astonishing how little besides essence there was to compromise on with McKim!

GENERAL VIEW OF WASHINGTON, LOOKING NORTH FROM THE WASHINGTON MONUMENT.

"I am living," said President Taft, in 1909, "in a house that has been made beautiful by Mr. McKim. It is a house to which you can invite any foreigner from any country, however artistic, and feel that it is a worthy executive mansion for a great nation like this, combining dignity and simplicity, and reflecting in all its lines (it does to me) the dignity and simplicity of the art of Mr. McKim."

Without subscribing to dicta of the average client that the good points of his house are due to his wife and the mistakes to his architect, but giving due credit to the genius of Mr. McKim, I still maintain that without such intelligent and appreciative clients as President and Mrs. Roosevelt the historic White House would not have been preserved. This statement is borne out by the McKim correspondence in my possession.

President Roosevelt's conspicuous service to Washington was rendered in preserving the Mall plan from wreck. The plans called for an open space of eight hundred feet between buildings on the north side of the Mall and those on the south side. This space was carefully calculated, after studying similar spaces at Versailles, Compiègne, Vaux-le-Viconte and Fontainebleau, in France, Schoenbrunn in Vienna, and Hatfield House in England. Provision for the four rows of elms and the driveways on either side of the *tapis vert* were carefully provided for. The plan contemplated the carrying out of L'Enfant's original design

The Mall, a garden approach to the Capitol from the White House, planned by Peter Charles L'Enfant (1791) under the direction of President Washington. The view is directly east from the Washington Monument. In the center is the Capitol, flanked on the right by the Office Building for the House of Representatives, and on the left by the Senate Office Building. Further to the left is the monumental Union Station, and the new Post Office. The Library of Congress appears beyond the Capitol. In the foreground, on the right, are the new wings of the Agricultural Department Building, on the left the new National Museum Building; both structures are located with reference to an axial line beginning at the Capitol, extending through the Washington Monument to the Lincoln Memorial.

for the Mall. It was for this that the railroads were taken from the Mall.

There were influences at work to break up the whole commission plan. An estimate of these influences will await the digging of a few more honored graves and the release of information not yet available. President Roosevelt was busy with other matters, and, in spite of all the efforts of Senators Newlands and Wetmore, Secretary Wilson's people located the new Agricultural Department Building so as to spoil the Mall composition. President Taft, at the McKim memorial meeting, told the story, with a fund of humor that more than makes up for some minor historical inaccuracies:

"The Mall was Mr. McKim's chief anxiety lest Congress should forget that important part of the plan for the improvement of Washington. The cellar and the foundation for the Agricultural Department Building had been begun, and some $8,000 or $10,000 expended, when it came to Mr. McKim's knowledge that the building, if erected according to that plan, would be a few feet too high and a few feet too near the centre, and he came to prevent it. The Secretary of Agriculture was not disposed to regard that variation from the plan as substantial, and was very much opposed to the change.

"Mr. McKim came to me, after Mr. Root left the Cabinet, as his only true sympathizer and friend, and asked me to speak to the President, whom he also regarded as a friend and sympathizer, but one who at times needed convincing. So I went to see the President and explained to him the situation, and he at once agreed that we ought to change it. 'But,' said he, 'the trouble is with Uncle Jimmy, who has a real cause of complaint. He says that these architects have delayed too long, and the public money cannot be wasted and expended in this way.'

"'Well,' said I, 'can't we call a council, or something of that sort, and solemnly sit on the subject, and then finally reach the right conclusion?'

"He said, 'We can, and we will,' and we did. Mr. McKim was of counsel, and Mr. Green and two or three others. The President took Mr. McKim to task at once at the audacity of architects who wait thirty and sixty days, until plans have been completed, and then come in and attempt to make a change. Well, that was not a very good beginning, and I am afraid that our brother McKim thought the jig was up. But it so suited the Secretary of Agriculture that when there appeared a suggestion from an engineer that possibly not $10,000 or $5,000 would be sacrificed, but an economy might be introduced in another way, the Secretary, at the suggestion or the invitation of the President, said that he thought possibly it might be worked out that way, but the President insisted that if we did, we did not intend to waive the criticism that we had to make against the profession of architects by reason of their delay. And so we separated.

"The Agricultural Building was moved. McKim and I walked up the steps of the War Department. I said: 'Mr. McKim, I congratulate you on your victory.' He turned and looked at me a moment, and said: 'Was it a victory? Another such and I am dead.'"

"President Roosevelt," said Elihu Root, "needed to add nothing to the many reasons that I have for respect and affection for him, but he did add to both of those by the steadfastness and generous appreciation with which he stood by McKim in his strenuous efforts to prevent the park-system plan from being overslaughed and rendered impossible by subsequent inconsistent construction."

One picturesque and characteristic act of President Roosevelt perhaps was also vital to the carrying out of the plan of 1901. When the Pennsylvania Railroad retired from the Mall, the old Sixth Street station remained—the station in which President Garfield was murdered. The District National Guard wanted it for an armory, and various other uses were urged by the small economists. The President disposed of the matter by ordering the immediate and speedy demolition of the building. Before official Washington rubbed its eyes open, the big stick had done its work. No such high-handed proceeding had occurred since Boss Shepherd, having lured the District of Columbia judges to a clam-bake down the Potomac, had the North Liberties Market (on the site of the present Carnegie Library) torn down while those injunction-powers were beyond reach.

The "temporary" army and navy factory-office buildings, which intrude their huge and ugly bulk up to the very steps of the Lincoln Memorial, await the advent of another constructive destroyer.

VIEW OF THE MALL FROM ARLINGTON (PROPOSED PLAN).

Roosevelt Memorial Association

The Roosevelt Memorial Association has been formed to provide memorials in accordance with the plans of the National Committee, which will include the erection of a suitable and adequate monumental memorial in Washington; and acquiring, development, and maintenance of a park in the town of Oyster Bay which may ultimately, perhaps, include Sagamore Hill, to be preserved like Mount Vernon and Mr. Lincoln's home at Springfield.

In order to carry this programme to success, the Association will need a minimum of $5,000,000, and so that participation in the creation of this memorial fund may be general, it asks for subscriptions thereto from millions of individuals.

Colonel Roosevelt was the greatest American of his generation. He blazed the trail which this nation must travel. Unselfish and sincere in purpose, unswerving in seeking the right and following it, definite and direct in action, with his theory of personal responsibility for wrongdoing and his creed of "the square deal" for all, he gave a lifetime of devoted public service which must stand as an inspiration to the youth of this land for all time. Ardently American, believing profoundly that only through fullest acceptance of America's privileges and responsibilities could the people of this country realize their highest well-being and fulfil their obligations to themselves and to humanity, he set up ideals which it is not only a duty but a privilege to follow.

A memorial to this man will not so much honor him as honor America and the citizens who raise it to him. A contribution to the Roosevelt Memorial will be, in the highest sense, a pledge of devotion to ideal citizenship. Checks may be sent to Albert H. Wiggin, Treasurer, Roosevelt Memorial Association, 1 Madison Avenue, New York City.

William Boyce Thompson,
President, Roosevelt Memorial Association,
1 Madison Avenue, New York City.

There is Little Danger of Loss in Judicious Building Investment—High Rents Will Make Up for Increased Cost

The cost of construction is not high to-day. It is low compared with food, clothing, and commodities in general. It is high only in comparison with its own pre-war level. Commodity prices will undoubtedly recede because food and clothing and many other things were affected by special war conditions; for example, scarcity of transportaion, which prevented shipments from distant countries to the Allies. But they cannot fall to the pre-war level.

But, although some readjustments in the wages of individual trades and in the prices of individual classes of building materials may take place, the cost of construction will not come down to such an extent as to endanger a judicious investment made to-day in the erection of a new building. Where the rents offered will show a fair net return on the cost to-day of a new building after deducting a reasonable sinking-fund allowance, no one should hesitate to build or to lend money for building.

Rents are determined by supply and demand. In the case of housing, during the early part of the war, the demand was curtailed by the rapid advance in commodity prices, which impelled many tenants to crowd into or get along with less space than their normal standard of living required, and by the drafting of the young men of military age. With a year, however, these influences had spent their force. By the end of 1919, however, according to the replies obtained from a questionnaire sent to real-estate boards in ninety-one cities, only four of these cities had a housing demand that was below normal, while in fifty-two cities rents had advanced 10 per cent or more, in some instances 40 per cent to 50 per cent. This rise in rents took place at a time when the population at home was as economical of house-room as possible and while several millions of soldiers were absent in the service.

Book Reviews

The charm of old doorways is a pervasive one, and it would seem as if with the passing years and the destruction or transformation of many old houses that the charm becomes ever more insistent. To one who has an eye for observing there are architectural details of striking beauty and historic interest to be found not only in the cities of New England and the South, but as well along the country byways, in the little old towns that nestle among the hills or look out over the reaches of the Sound or the shores of the Atlantic from Maine to the Gulf.

In his book on "Old New England Doorways," Mr. Albert G. Robinson has included many off the beaten track of the collector. They are a mine of suggestion to the architect of to-day—especially when everything Colonial seems so much in favor. Of the men who built the old houses and relieved their plain fronts with these ornamental doorways the author says:

"'The correspondence of designs in all of the States east of the Alleghanies, from Maine to South Carolina, argues a common origin. This is found in books on carpentry, published in England, notably, perhaps, those of which Batty Langley was the author. His books appeared at various times from 1726 to 1756. They were intended for the use of carpenters, and gave measured drawings of columns and pilasters, entablatures and architraves. From Langley and others, selections were made by the local builders who might follow the drawing with exactness, or might modify or vary the design to suit their own taste and judgment. Most of these men were masters of their craft and, moreover, were men of artistic sense. They knew the importance of proportions, and their work shows their close attention to that feature, vital in all good architecture. The leading architects of the present time can produce nothing, in doorways, superior to many of those produced by the master-artisans of the eighteenth century, and few give to the matter of proportions the careful attention that was given by the carpenter-builders of the seventeenth and the eighteenth centuries."

While Mr. Robinson does not go into technicalities, he deals with his subject in a way that will appeal to the architect, and the many excellent full-page plates bring out with sufficient clearness essential details.

Charles Scribner's Sons, Publishers.

We are in receipt of "Memoirs of the American Academy in Rome," Vol. II., a beautiful volume in its making, and in its contents a notable contribution to the high purposes and scholarly achievements that are associated with all of the academy's work.

We note again with the regret that we first learned of their deaths, the page "In Memoriam" of Jesse Benedict Carter, Director of the American School of Classical Studies in Rome, 1907–1912; Director of the American Academy in Rome, 1913–1917. Died July 20, 1917.

Frederic Crowninshield, Director of the American Academy in Rome, 1909–1911. Died September 11, 1918.

Richard Norton, Director of the American School of Classical Studies in Rome, 1899–1907. Died August 1, 1918.

The chapters and plates include "Recent Work of the School of Fine Arts," by Kenneth E. Carpenter, Walter L. Ward, William J. H. Hough, Philip T. Shutze, Edward G. Lawson, John Gregory, Leo Friedlander, Carl P. Jennewin, Henry I. Stickroth, Russell Cowles, and George Davidson.

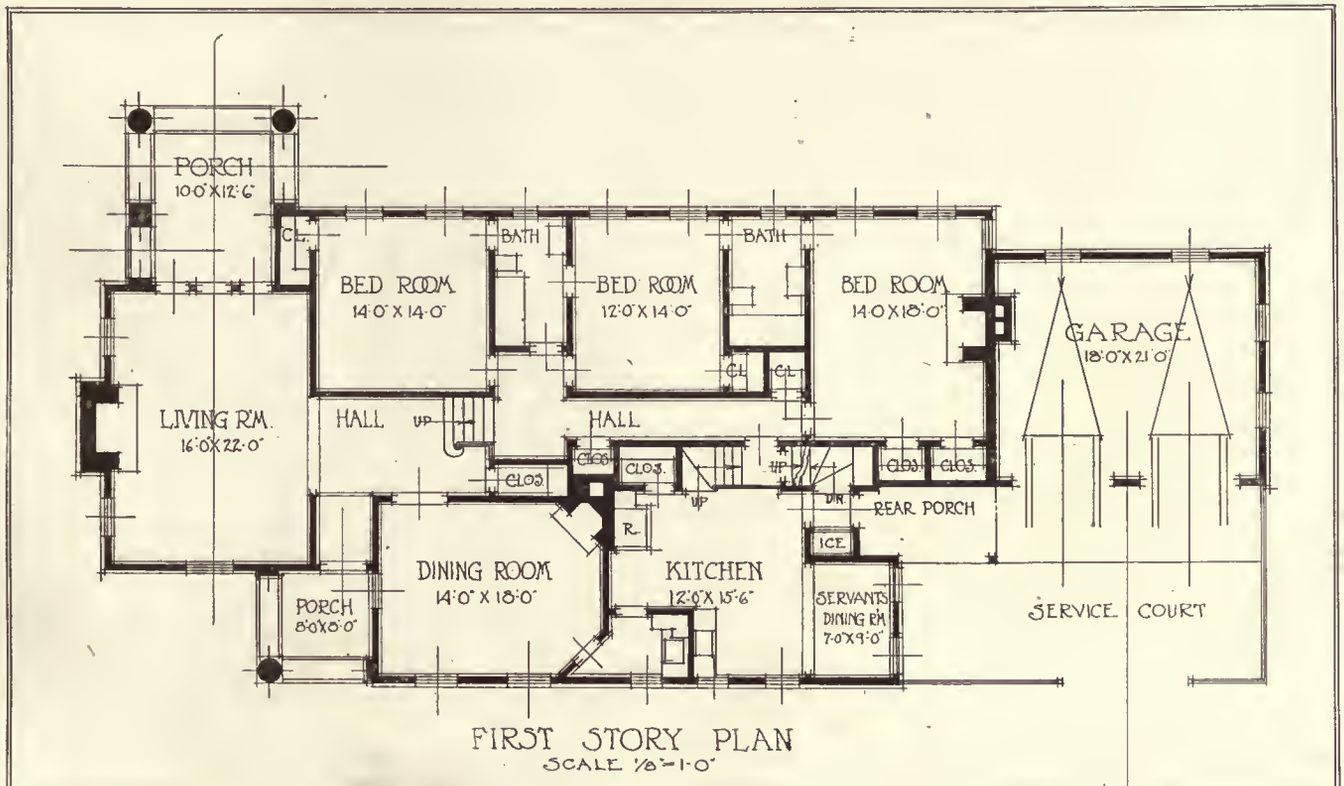
Other contributions are by E. Douglas Van Buren, "Terracotta Arulæ"; Lucy George Roberts, "The Gallic Fire and Roman Archives"; Albert William Van Buren, "Studies in the Archeology of the Forum at Pompeii"; Stanley Lothrop, "Pietro Cavalina."

Published by the University Press Association, 280 Madison Avenue, New York.

BUNGALOW FOR F. F. ALEXANDER, GLEN HEAD, L. I.

Warren & Clark, Architects.

FROM HALL TO LIVING ROOM.



A Possible Saving in Building Expense

By Richard P. Wallis

THE building industry of the country at large is not resuming operations at a pace sufficient to wipe out the deficit caused by the War. It was the general opinion that as soon as peace had been declared, there would be an immediate volume of building for all purposes that in extent would exceed the average of many years past. It was freely predicted that there would be a surplus of labor, that labor prices would fall and that material prices would be cheaper—inducements that would inevitably stimulate building operations. A survey of the past four months does not justify this earlier prophecy. We are now facing a labor shortage in all building lines, labor wages are going up in an effort to neutralize the higher cost of ordinary living. Reserve surplus of building material have been depleted, and no attempt made to replenish their reserve stock because of the many uncertainties confronting the manufacturer. Now when the demand is beginning to come, materials must be manufactured on a hand-to-mouth basis. This means uncertainty as to delivery and a consequent increase in cost to insure any sort of delivery.

These facts, together with the great demand to-day, contribute toward what the prospective builder must face, and that is higher building cost. This fact is greatly hindering the resumption in building work on a scale commensurate with its importance and necessity. Every effort should be made to discover a method that will tend to diminish this reluctance of the public to build.

In order to see what can be done to accomplish this end, let us investigate the present-day theory of the manufacturer and see if the lesson he has learned cannot be applied to this great manufacturing industry, the manufacturing of floor space.

The factory operator to-day aims to meet modern cost conditions by increasing his volume of business at a reduced cost of production. This is brought about through more efficient training of the operatives, labor-saving devices, increased efficiency in plant layout, increasing the use of his individual product by a campaign of advertising and developing new uses for his product.

There is a germ of thought in the experience of the manufacturer that can and should be applied to the manufacture of buildings, whether factories, public buildings or residences. Any method of building that will eliminate an unnecessary group of costs reduces the cost of the completed article, thereby making it possible to increase the volume of business which is the end we are after.

One very evident way of saving a considerable percentage of the cost of a building would be the elimination of the unearned profit made by the general contractor on the work of his various sub-contractors. The general contractor has in a sense become the clearing-house of building rather than the builder himself. He rarely combines within himself all of the trades necessary to turn out a completed building. Most likely in the past he has been a masonry contractor or a carpenter contractor who has taken over to himself the handling and the directing of the other trades incidental to building. Of course it will be said that this system has certain definite advantages and to a degree it is true. Centralized responsibility is one of the many lessons learned in the hard school of practical experience.

Assuming certain benefits accruing from this arrangement, let us examine the debit side of this arrangement and discuss the evils that have sprung up under this system. The purpose of this article is to suggest a building method that will eliminate unnecessary cost and yet insure a satisfied client. The first point to investigate is the profit that the owner must pay to the general contractor for the services of organizations other than his own. The general contractor does not supply the labor of the sub-contractor, he does not supply the material or the supervision of its installation. He merely acts as the broker that in a general way sees that each component part of the building is installed in harmony with every other part. In this service he is paid a profit on the work of other independent organizations. This separate organization or sub-contractor also has to have his profit or he would cease to be able to carry on his business. In this way the owner pays two profits, the first to the general contractor and the second to the sub-contractor. In addition to these two, the architect must receive his profit for his conceptions and welding together of the various ramifications of the arts and sciences necessary for the completion of the perfect building. This brings the total number of profits that must be paid by the owner up to three. In a sense all three are legitimate profits, but of the three the one most easily dispensed with is that of the general contractor. In other words, his profit on those items that compose a considerable portion of the completed cost of the building is the one earned with least amount of effort and responsibility.

The second point to consider is the relation existing between the general contractor and his subs. In theory the system is excellent, the subs reporting to the general contractor and receiving their payments from him and all working together in harmony, but in actual practice it does not work out as well. The general contractor under the present lump sum form of contract sometimes is forced to figure pretty closely. In order to do so he plays one of his estimating subs against the other, concealing from him the actual facts of the case. Sometimes he does this when the necessity of getting close figures is not necessary. In this manner he is able to deduct from the legitimate profit of the subs a little here and a little there, so that the sum total of these bits of profit amount to a considerable sum. Frequently it is the sub-contractor that pays the general contractor his profit on the entire job. Aside from the ethical aspect of this policy there is an unfortunate condition created in the carrying on of the work that militates against the interests of the owner.

A good many reputable sub-contractors refuse to bid on work at the invitation of the general contractor, but in case of so doing they must protect themselves against the possibility of such a line of action. This means a higher cost to the owner. The reluctance of the reputable sub-contractor to bid frequently leads to the employment of those not so scrupulous and there the trouble begins. In order to make a legitimate margin of profit the sub-contractor resorts to substitution, skimps his work unless closely watched, and tries in every way to cheapen his share of the work. This condition necessitates a closer inspection of the work by the architect, and invariably leads to a loss of friendship between owner, architect, general contractor and sub. In cases of this kind it is usually the owner that suffers the most, as he is the party most vitally concerned with the cost and quality of the work performed. But this con-

dition reacts also on the other parties to the contract and an atmosphere of suspicion springs up between the parties whose best interests demand a harmonious co-operation for the benefit of their own fortunes.

The logical solution for a situation of this character is to make the designing architect or engineer responsible for the coherent prosecution of the work. Allow the architect to exercise those functions of co-ordination now delegated to the general contractor. The competent architect, and it is about him that we are speaking, is the logical party to see that the actual physical construction of the building is in accordance with the plans and specifications that he, himself, has drawn up. His is the office that has conceived and constructed the building on paper. Why should he not carry this function one step further and be responsible for the actual erection of the building. The building itself is the main object, the plans and specifications are merely implements of service.

The general contractor rarely sees the plans and specification until such time as he is invited to figure on them. He is not conversant with the ideas of the architect or owner, and he must, in order to intelligently perform his share of the operation, acquaint himself with all of the preliminary details. On the other hand, the architect has nursed the project from infancy, and is familiar with all its whims and fancies.

Under this arrangement the general contractor would be eliminated. The architect would be empowered under the terms of his contract with the owner to employ the subs directly. In this way he would be able to pick and choose among the men he has done business with in the past, and in whom he has implicit confidence based upon faithful and intelligent performance of previous work. In this manner the subcontractor, being insured of his legitimate margin of profit, would find no incentive for cheapening his share of the work, and even if this incentive should exist he would hesitate to take advantage of it, due to the fear of jeopardizing his position with the architect. The owner would benefit directly under an arrangement of this sort. His building would cost less, due to the elimination of a general contractor's fee, and he would be certain of satisfaction in his completed building, resting secure in the knowledge that he has received value in full measure for what he has paid for. Is this not a logical conclusion?

The profession of architecture would be benefited by an arrangement of this sort. It is only too true that among laymen the profession of architecture does not receive the credit that should be its due. Few realize the complexities that a practising architect meets with even in the design of a comparatively simple building enterprise. The architect must be a composite designer, engineer, business man, and executive. These functions render him capable of handling the intricate details of his trade, and as soon as he is seen by the public at large in the actual execution of his work, designing the building, arranging for and carrying on its erection, he will be given credit by the world for what he actually is, a business man as well as an artist. The agreement between the architect and the various sub-contractors should be on the basis of cost plus a fixed fee. The advantages of such a system are numerous. Each sub should estimate his share of the work, submitting to the architect his upset price. If the cost of installation runs over this price the contractor should pay it out of his own pocket, but if there is a saving effected the contractor splits it with the owner. This is a decided incentive for the contractor to do his work as economically as possible. His profit is assured and there is, therefore, no reason that he should attempt to install inferior materials in an unworkmanlike manner. His personal and business relations with the architect demand the very best that he can give and the owner benefits thereby.

As a matter of fact the owner benefits from every step of the method outlined above. His costs are reduced and he is guaranteed a satisfactory job. The architect, increasing his functions, comes into his own, and the various contractors are insured a square deal. It would seem that everybody connected with the erection of a building would be benefited by such an arrangement. We would have more buildings at a lower cost and the demand of the present would be met, which is the end we are seeking.

Lumber Salvage in France

A little wood goes a long way in a French house, writes the *American Lumberman* representative from France, and the large amount of wood that will be salvaged from the devastated cities will probably result in a smaller demand for American building lumber for reconstruction than was at first expected.

Although cities and towns are in ruins in the war regions, they are not pulverized, and in most of them there is enough building material fit for salvage to rebuild a fair percentage of the houses. The steel is nearly always so badly twisted as to need remelting, but there is a great amount of lumber in the form of floor and roof beams, door planks, etc., that is still in excellent shape. Some which has been partly splintered may be resawed.

There is also, according to the same authority, a large amount of trench lumber; in fact, in the Allied and German trenches, dugouts, and other military works, "billions of feet of lumber and timbers that will be used again." Practically every permanent dugout has walls and roof and often floor of thick boards and planks, the whole braced with enormous timbers. All along the Hindenburg line, and for miles in the rear of both opposing positions, are great quantities of wood in the dugouts, trenches, and artillery positions. Most of this wood is in fine condition, and all can be used extensively in rebuilding homes, and even cities.

The French peasants have been most careful in salvaging their forests also, the sound trees and those whose wounds will heal being left standing, the hopelessly broken trees being cut for lumber, and the rest, branches and all, being neatly piled for cord-wood. Even the leaves are gathered up for fuel.

American lumber interests should keep in touch with the French situation, even though there is now not much demand for building lumber. A demand will be sure to develop later.

THE LIONS OF ST. MARK'S IN THE BOWERY, NEW YORK CITY.

From a photograph by J. B. Carrington.

Editorial and Other Comment

Still Marking Time

RECENT talks with architects from various parts of the country confirm the general opinion that there is still reason for marking time but with every prospect of an early order to go forward. The uncertainties with regard to prices are in evidence to such an extent as to prevent the making of contracts for any large developments. Many offices are working overtime getting ready for prospective building, but there is little real encouragement until present industrial conditions become more stable. There is a marked advance in home building, however, and hardly a suburb but shows many new buildings going up. Even with all that can be done in this field there will be a dire shortage of places for people to live. It is in the great centres, the cities, where the need is greatest and where there seems the least prospect of meeting the demand. There seems to be no trouble in securing money to build the high-class expensive apartment house, but the greatest need is for those of moderate rental. While there has been a very considerable number of alterations of old buildings, of remaking of the old type of city house into small studio apartments, many well-laid plans that promised relief have been held up by local tenement laws. It would seem as if some latitude might be granted architects in these times, when the exigency of living has become so sharp. Far be it from us to advocate any less careful protection from fire risks or any reversion to old methods of overcrowding and indifferent consideration of the right amount of air and light, but may there not be revisions made to meet new conditions that will yet fill all necessary requirements. Certainly it would be well to take these matters under consideration, with a view to solving the problem of using to the best possible advantage existing buildings capable of satisfactory alteration.

In California

FROM *The Building Review*, published in San Francisco, we learn that conditions on the coast parallel those in the East. Their problem seems to be not only to meet the needs of the native sons but the ever-growing migrant population more or less transient, from the East, seekers after a milder winter climate and a less congested population.

"The renting departments of real-estate offices are figuratively throwing up their hands and calling 'Kamerad'! at present, on both sides of San Francisco Bay. And although there is some increase in the construction of new housing accommodations, it is by no means adequate to satisfy the demand, which continues to increase daily. A prominent San Franciscan, formerly connected with one of the most successful local real-estate firms, who recently returned from the East after a long period of Government service, expresses his firm belief that there will be a remarkable growth in population here. 'The eyes of the East are on California,' he says, 'and all over the country people who are dissatisfied with climatic and living conditions are planning to move their families to this State.'

"The present high cost of new construction is preventing much work from going ahead, to meet this situation. But there is an alternative possibility which has received little or no consideration, and which from an economic standpoint has great advantages. Throughout the city are numbers of old houses, many of them better built than more recent work, which are too large for the average family, and which would lend themselves easily to remodelling. For a comparatively small expenditure, such a house can be converted into a modernized, sanitary, attractive two or three flat building, or in some cases into a small apartment house. Probably several thousand extra families could be accommodated in this way, in a space of time and at an outlay of money very much less than a corresponding amount of new building would entail.

"The conservation of present resources is not only economically advisable; it is practically a necessity under the existing conditions of assets and liabilities throughout the world. In utilizing old structures wherever possible in the increasing of housing facilities several objects are attained. The value of the old property is increased, and its life prolonged. The use of available space is doubled or more, and in a compact and still growing city this is distinctly important. The service of all public utilities is increased without any added cost for furnishing such service. The drain upon material and labor is so comparatively small that the normal development of new building should not be seriously affected. The demands upon financial institutions would in many cases become the putting of old loans on a sound commercial basis and in all cases, with the ever-growing demand, would be well secured, provided the work be done legitimately and wisely.

"That, of course, is the necessary proviso. Even more than new construction, remodelling should receive the careful attention of an expert. There are problems, æsthetic and practical, which arise in such work and upon the satisfactory solving of which depends the real value of the undertaking. And there is perhaps more real creative triumph when such difficulties have been overcome than when obstacles exist only in the mind or on paper."

As to Competitions

THERE is some interesting and suggestive comment in the September number of the *Journal of the Institute* apropos of the new State capitol of Nebraska. It begins with the old question of competitions, one that has been a discussion of long standing, and one that probably never will be decided satisfactorily to all concerned. In the first place there seems to be something innately repellent to many in the very thought of any competition, and we need not dwell upon the fact, too often proved, that the results are often powerfully disillusioning. In these public affairs there is always the pull of local talent, of local dilletantism, of local politics, and the personal equation cannot be eliminated from any public effort.

"Why not have the programme for the competition confined to architects who are known to be able to design and build it—and surely no others would be invited—and instead of asking for a set of drawings, ask for a thesis upon what a capitol should be and how it could be made to serve the great purpose of helping to build a finer state?"

By all means in all such matters let us confine the programme to those able to design and build it, and would there were some infallible way of arriving at such a choice. We should like to be present and see the impression that might be made by the reading of a thesis to any local town board or committee appointed to make a choice of architects. Few have the artist's vision, the gift of creation and imagination, and what a pity it is that so often though the architect "can use them somewhat in the design and plan, he is, after all, bound by a conception that is not his own, by the rules of cubage, and, worse than that, he is also bound to respect the known predilections of the jury. He cannot design in opposition to the kind of building he knows will win their approval."

"One could write an elaborate thesis on the subject of how a State capitol should be made an effective symbol of citizenship and a great lesson in art at the same time, but that is the function of the architect who is to design it. If he lacks that conception, then the building will never possess those qualities, but will remain still and cold and lifeless. The cornerstone will be laid with a ceremony, and there will be speeches at the dedication. After that there will be boastfulness and pride, but no understanding."

It is in no carping mood that we refer to this matter of competition. We are glad to join in the hope and plea for a finer idealism and only wish that we could believe that the times were right.

"That men may rise on stepping-stones
Of their dead selves to higher things."

America Is the Rightful Heir to All Architectural Styles

"Beauty is an architect's aim and beauty is a quality that knows neither race nor nation. The Cretan copied Egypt, the Hellene copied the Cretan, the Roman copied the Greek, the Renaissance copied the Roman, the modern architect copies them all. Greatness or badness in architecture depend not on the question of originality as against copying, but upon the success or failure of an architect to build beautifully, to solve some concrete problem in harmony with conditions, with materials, and with the ideals of contemporary culture.

"Our architects must, therefore, adopt the forms of past styles for our own use, as long as our American civilization is what it is to-day. Our architecture must be based on the architecture of the past as long as our culture is based on the culture of the past, and the forms that the architects copy and adopt will inevitably be forms developed by those people on whose achievements our culture is based. Just as every great national architecture has arisen through years of slow development, never blinding itself to the past, yet never losing in reverence for the past the call of new problems and new human needs to be met, so must American architecture arise; so it is arising before our eyes. Our architects are not using Roman orders or Gothic arches because they are too inefficient to design new forms; but because the forms they adopt are beautiful, and have been so judged for centuries. With our history and our make-up we can rightly claim any of the European styles as our own, because we are able to understand it. More than any other country of the world to-day the United States is heir to all styles, and all cultures, and just as Greek philosophy and Roman law, and feudalism, and Renaissance individualism, and the rationalism of the eighteenth century have all contributed to our institutions—our law, our education, our religion, our political economy—so our architecture must needs be based on the architecture that all these different peoples have developed."

From "The Enjoyment of Architecture," by Talbot F. Hamlin.

Art for Art's Sake vs. Business

"Did you ever stop to think, indulgent reader, that all the great architecture of the past—temples, cathedrals, public buildings—was not built as an investment to earn dividends? These architectural shrines at which we now worship did not represent so many shares of stock, the holders of which demanded a regular yearly dividend. They represented something else. They represented not an investment, but an expenditure—money thrown away, if you like—because those buildings represented the contributions of men who asked for no dividends except the enrichment of their spiritual lives. On the contrary, almost all modern building represents an investment which has to earn money. Between that kind of building and the temples of Greece or the cathedrals of France lies a great chasm. In that chasm we have buried the thing which once made architecture real. To-day we build for investment, we build for dividends, we build for profits, we build for earnings. Even our great public buildings are financed, usually, by bond issues, so that when a building is ultimately paid for it is likely to have been paid for twice. By this process we eventually spend twice as much money as for a building that should be paid for as the cathedrals were paid for, but there is a vast difference in the spirit of our squandering."

Artistic Ideals Observed in Home Building

CAMPAIGN REVEALS THAT AMERICA IS AWAKE TO THE BEST POSSIBILITIES OF CONSTRUCTION

IN the own your own home campaign the United States Department of Labor has received abundant assurance of a widespread interest in the artistic side of building. Wherever cities have conducted organized work to stimulate the construction of houses, evidence has been abundant that interest in beauty as well as utility governs the work of providing shelter for growing populations.

While the plan of the American Federation of Arts to make a tour of the country for the purpose of improving the public taste by the exhibition of pictures and statuary is praiseworthy, the application of art to everyday affairs must be made concrete, it is pointed out, if it is to have a speedy effect. For this reason exhibitions of wall paper, rugs, curtains, artistic in design, have been provided in connection with a number of the local campaigns. Models showing varieties in architecture and grouping of houses, with a view to best general effect, also have been shown.

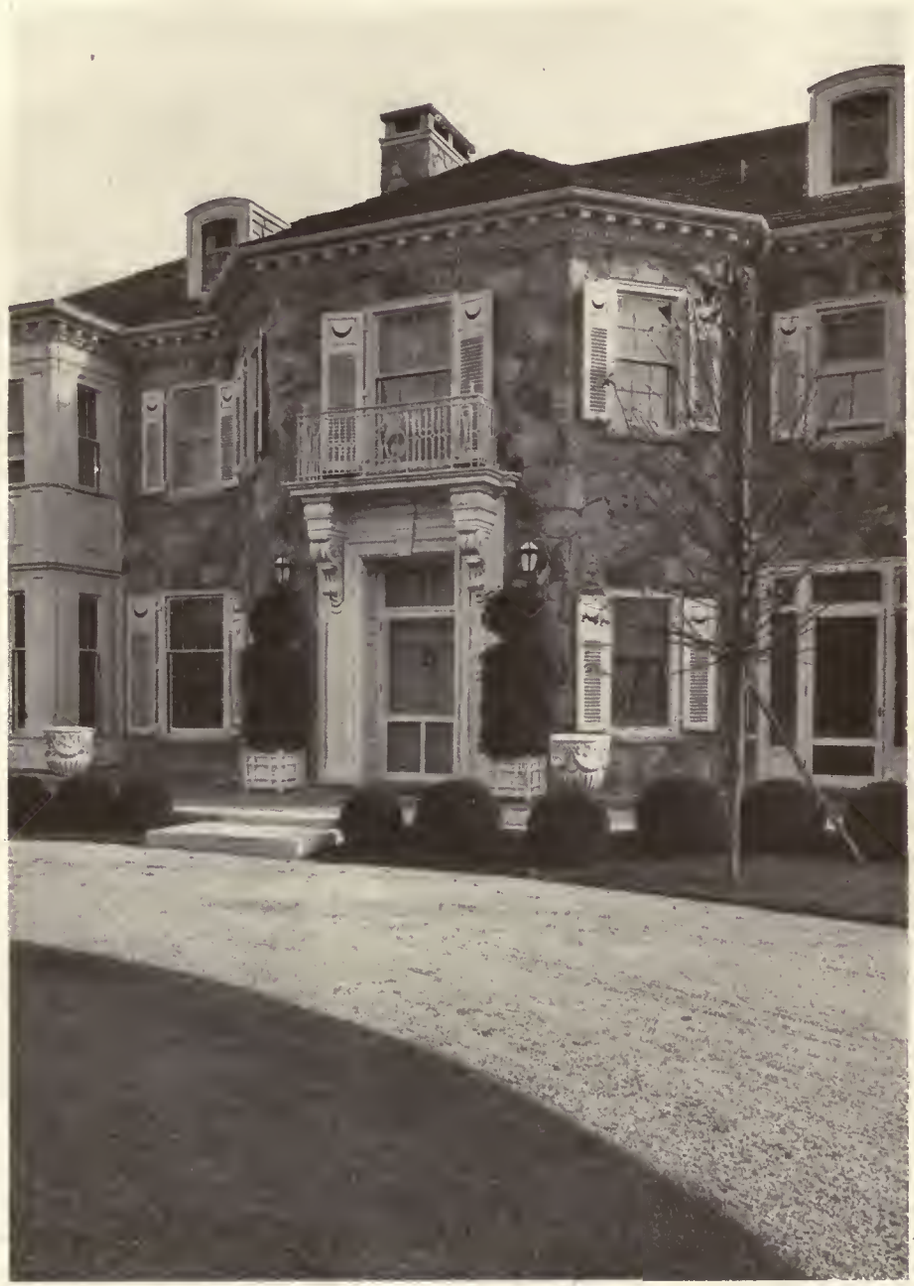
Landscape architecture has its part in the plans projected in most cities. The development of the garden as part of the home idea is extended to its community relationship wherever possible so that in the wholesale home-building cities beautiful may be assured.

MAIN FRONT, RESIDENCE, EARLE P. CHARLTON, WESTPORT HARBOR, MASS.

Parker Morse Hooper, Architect; Frank C. Farley, Associated.

GARDEN FRONT, RESIDENCE, EARLE P. CHARLTON, WESTPORT HARBOR, MASS.

Parker Morse Hooper, Architect; Frank C. Farley, Associated.



MAIN ENTRANCE.

DETAIL ON TERRACE.

Parker Morse Hooper, Architect; Frank C. Farley, Associated.

RESIDENCE, EARLE P. CHARLTON, WESTPORT HARBOR, MASS.

HALL AND STAIRCASE. Parker Morse Hooper, Architect; Frank C. Farley, Associated.

RESIDENCE, EARLE P. CHARLTON, WESTPORT HARBOR, MASS.

DINING–ROOM.

LIVING–ROOM.

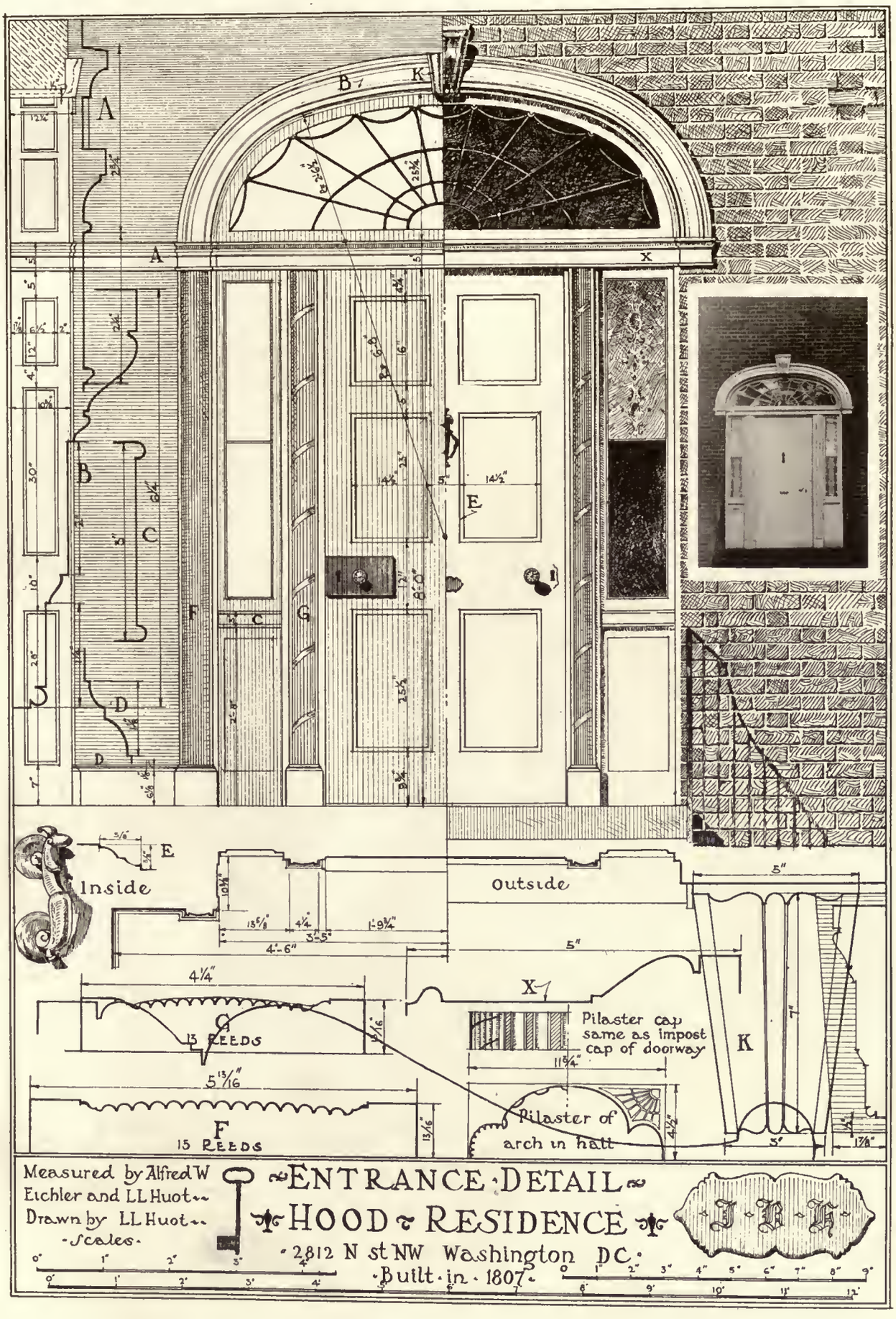
Parker Morse Hooper, Architect; Frank C. Farley, Associated.

RESIDENCE, EARLE P. CHARLTON, WESTPORT HARBOR, MASS.

MANTEL IN HALL.

MANTEL IN LIVING-ROOM, SHOWING ORGAN SCREEN AT SIDES.

RESIDENCE, EARLE P. CHARLTON, WESTPORT HARBOR, MASS.
Parker Morse Hooper, Architect; Frank C. Farley, Associated.

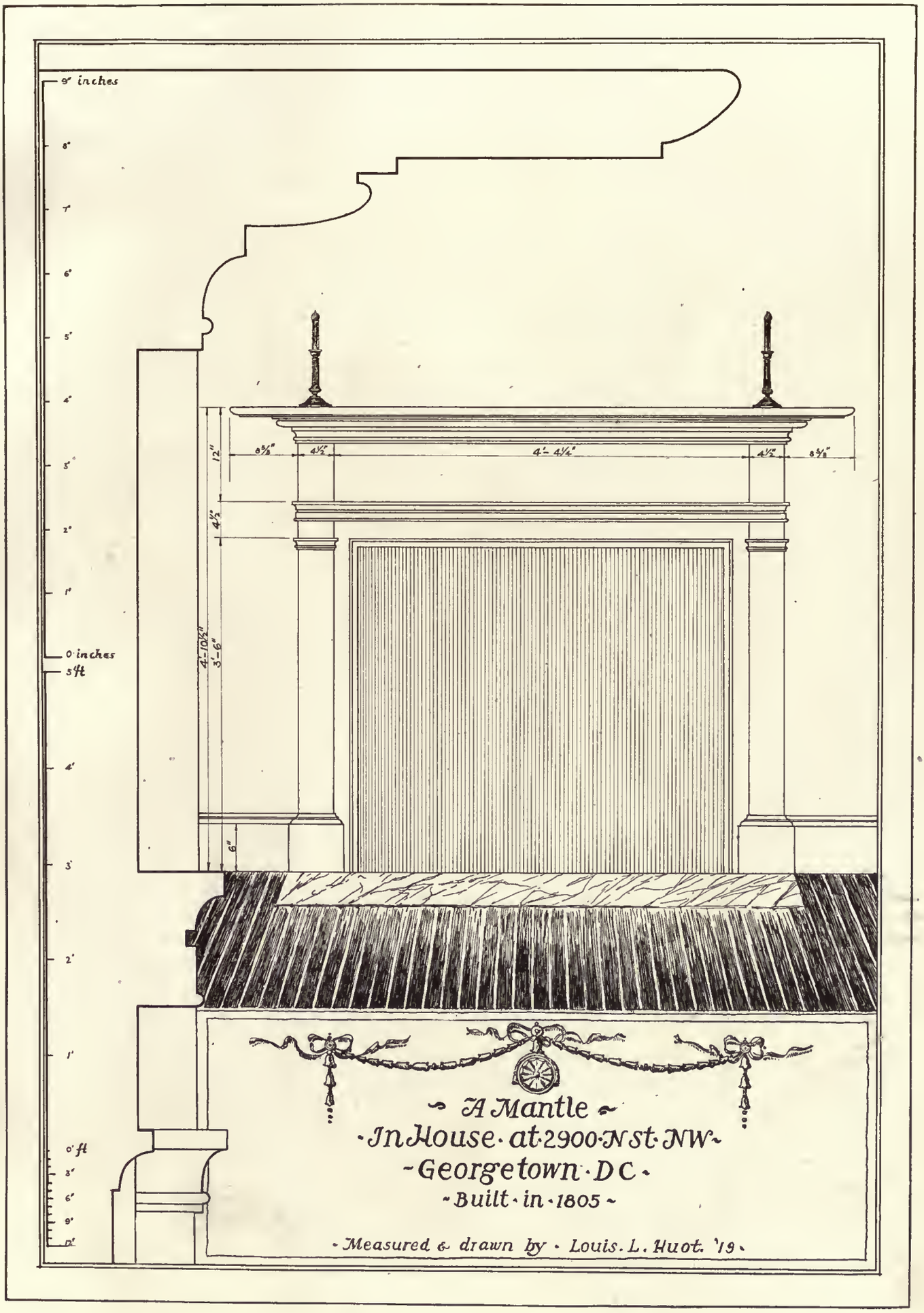


Measured by Alfred W Eichler and L L Huot
Drawn by L L Huot
Scales

ENTRANCE DETAIL
HOOD RESIDENCE

2812 N st NW Washington DC.
Built in 1807.

J R H


8" inches
7"
6"
5"
4"
3"
2"
1"
0 inches
5 ft
4'
3'
2'
1'
0 ft
3"
6"
9"
0"
12"
4½"
4'-10½"
3'-6"
6"
8⅝"
4½"
4'-4½"
4½"
8⅝"
A Mantle
In House at 2900 N St. NW
Georgetown D C
Built in 1805
Measured & drawn by Louis. L. Huot. '19

HOMESTEAD FOR CAPTAIN A. P. OSBORN, U. S. A., GLEN HEAD, LONG ISLAND (ALTERATION).

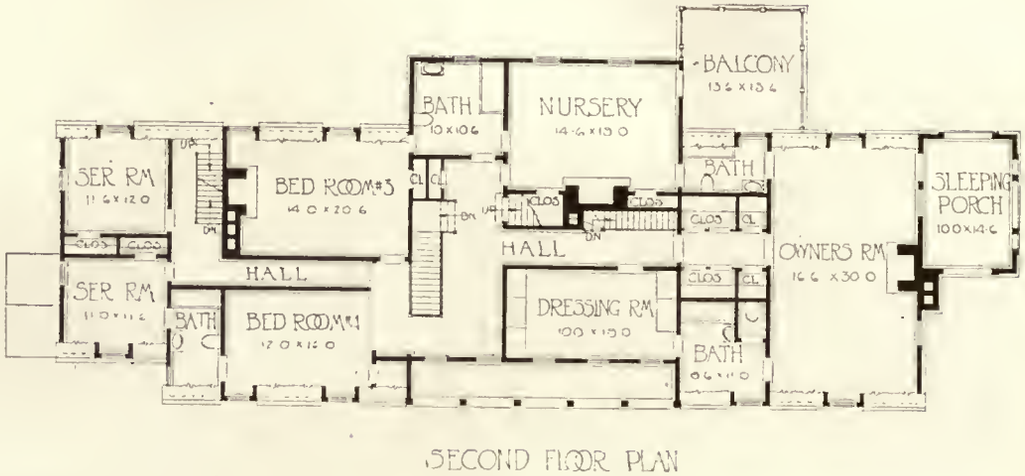
Warren & Clark, Architects.

REAR.

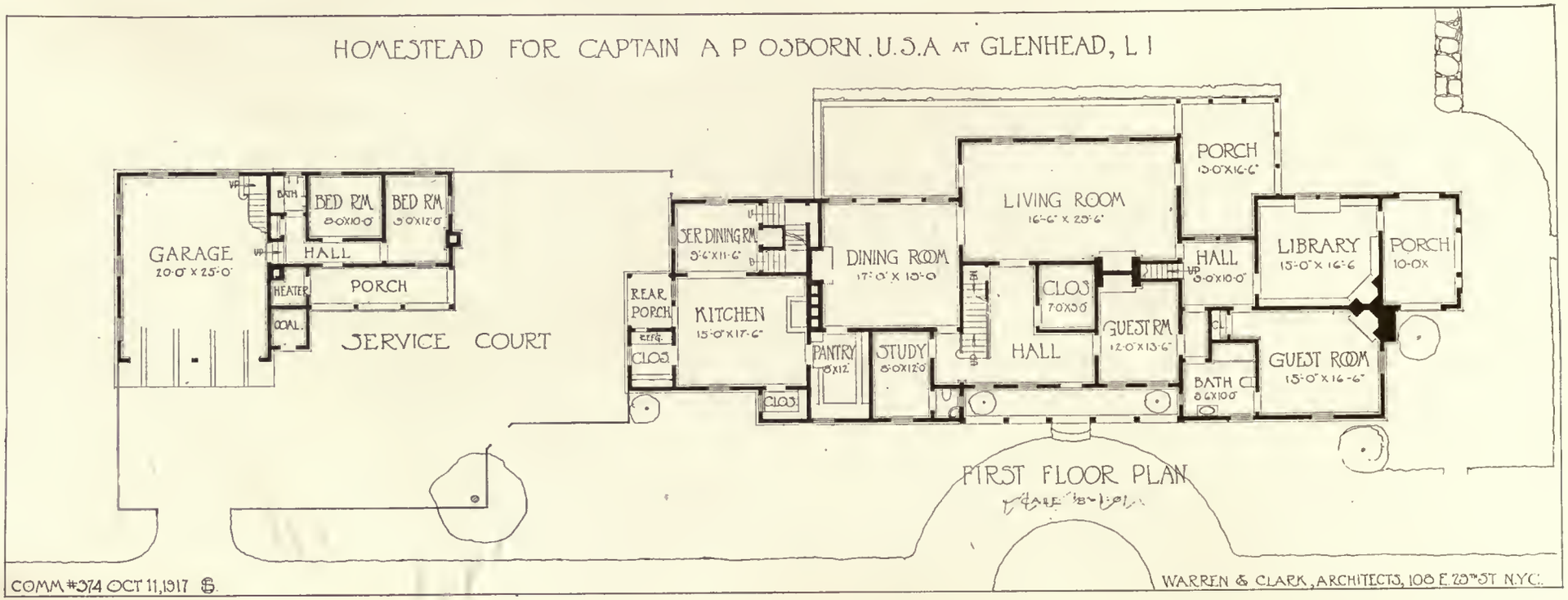
DINING-ROOM. Warren & Clark, Architects.

HOMESTEAD FOR CAPTAIN A. P. OSBORN, U. S. A., GLEN HEAD, L. I. (ALTERATION).

DETAIL OF PORCH.



SECOND FLOOR PLAN



ST. PAUL ATHLETIC CLUB, ST. PAUL, MINN. A. H. Stem, Architect.

MANTEL IN LOBBY.

LOUNGE.

A. H. Stem, Architect.

ST. PAUL ATHLETIC CLUB, ST. PAUL, MINN.

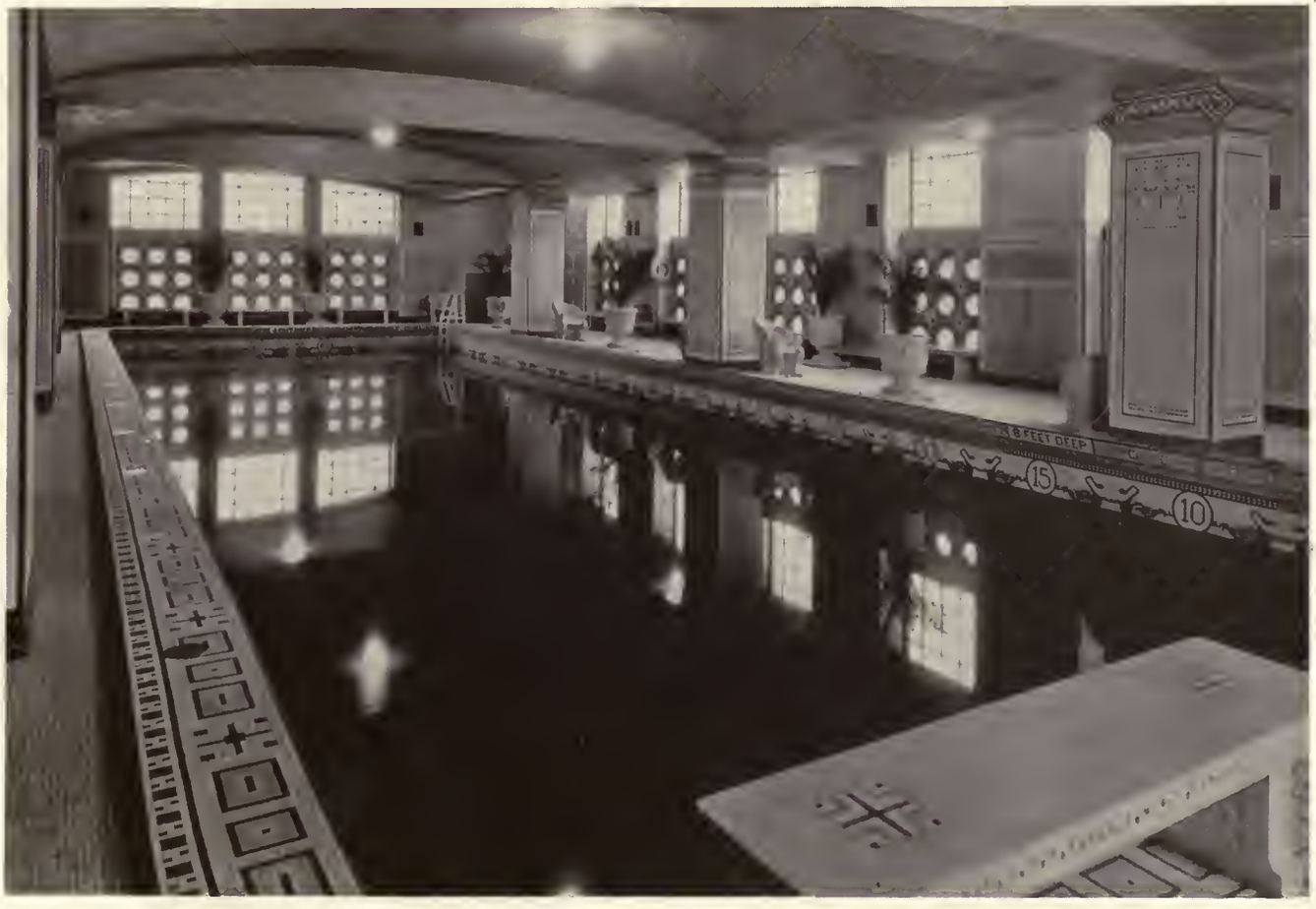
DINING-ROOM.

LOBBY

ST. PAUL ATHLETIC CLUB, ST. PAUL, MINN.

A. H. Stem, Architect.

MEZZANINE, WRITING–ROOM.



SWIMMING–POOL.

A. H. Stem, Architect.

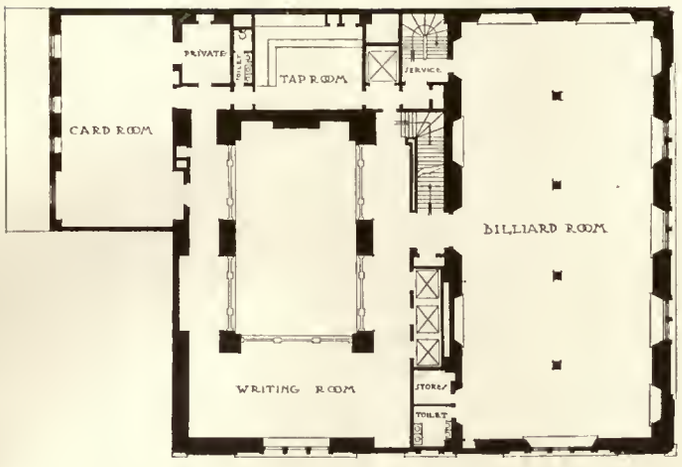
ST. PAUL ATHLETIC CLUB, ST. PAUL, MINN.

BILLIARD-ROOM.

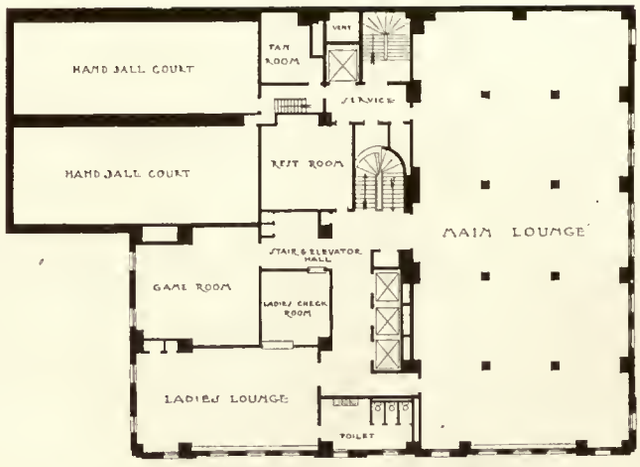
GYMNASIUM.

A. H. Stem, Architect.

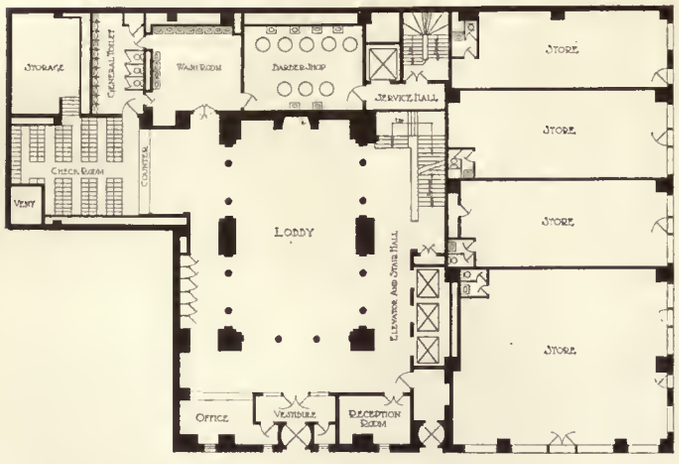
ST. PAUL ATHLETIC CLUB, ST. PAUL, MINN.



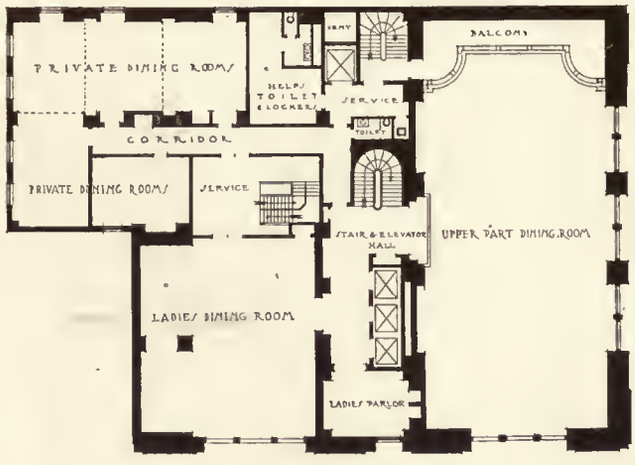
SECOND FLOOR



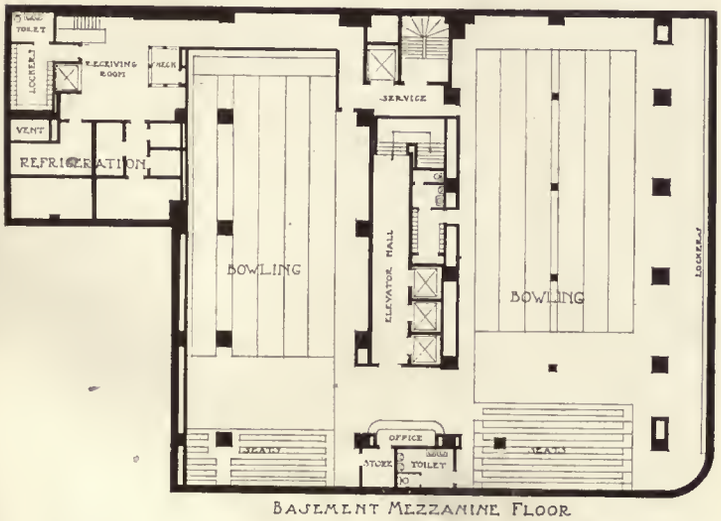
FIFTH FLOOR



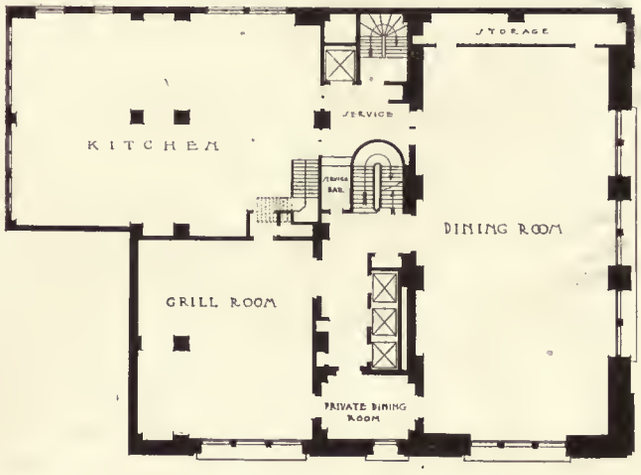
FIRST FLOOR PLAN



FOURTH FLOOR



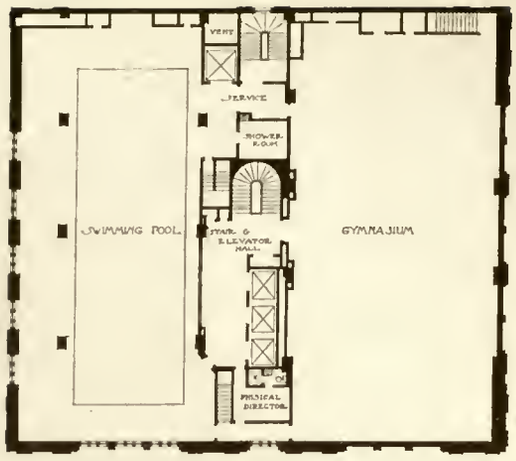
BASEMENT MEZZANINE FLOOR



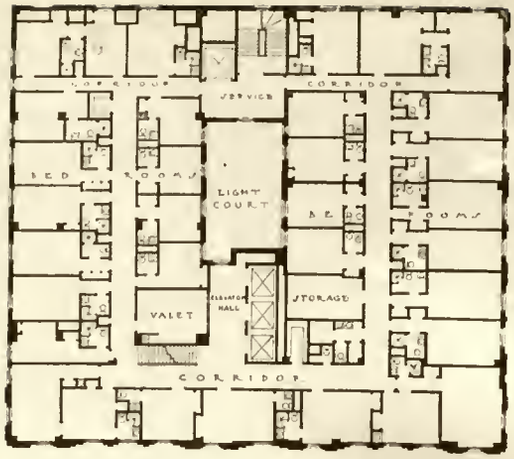
THRD FLOOR PLAN

PLANS.

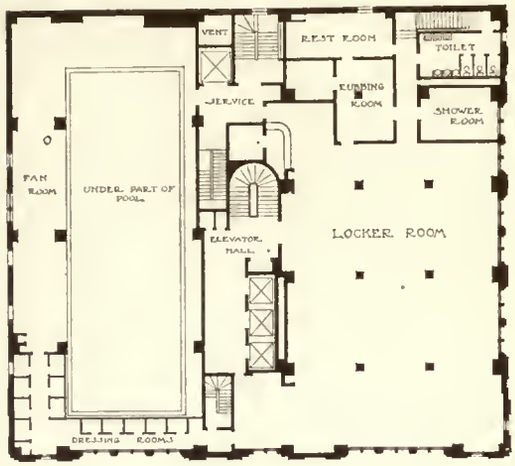
ST. PAUL ATHLETIC CLUB, ST. PAUL, MINN. A. H. Stem, Architect.



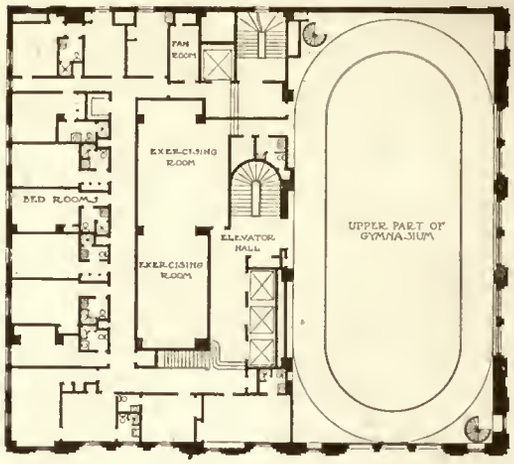
EIGHTH FLOOR



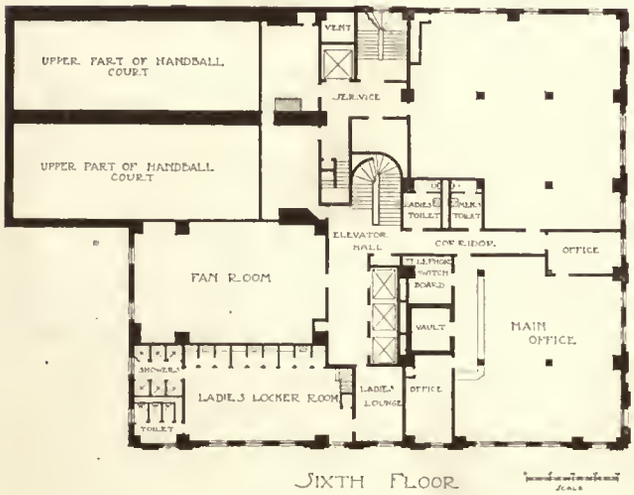
10th 11th & 12th FLOORS



SEVENTH FLOOR



NINTH FLOOR



SIXTH FLOOR

PLANS.

ST. PAUL ATHLETIC CLUB, ST. PAUL, MINN.

BOWLING ALLEYS.

A. H. Stem, Architect.

Modern Building Superintendence

By David B. Emerson

(Continued from September)

CHAPTER II

EXCAVATION, FOUNDATIONS, CONCRETE

ON our arrival at the job to take up our duties as superintendent, we found that the contractor had commenced excavating, and was making good progress with the work. Work was being done with a one-yard steam-shovel, and all excavated material was being carted away and dumped as rapidly as it was excavated. Always be sure and see that a sufficient number of carts are provided to move the material rapidly, but if too many are used they will cause congestion around the job, which is liable to make friction with the authorities. On further examination the soil was found to be as the tests showed, a good compact gravel, with no underlying silt or quicksand, except that part where the bottom was particularly bad and had to be piled.

As the excavation progresses, we should give orders for the excavation of all trenches for water and sewer-pipes, and for all connections to the street service for electric wiring. This work should be done if possible by the contractor for the excavating, which will avoid complications, and hold one contractor for all street obstructions, etc. The plumber should be notified and he should make all connections for water and sewer, and bring them into the building for connecting to later. The material having been delivered at the building, sheet piling was ordered to be done at once to support the sides of all excavations. Planks for sheeting were ordered to be of sound, square-edged spruce. For that part of the basement where excavation was only about sixteen feet deep, and for all shallow trenches, two-inch plank were thick enough, but where the sub-basement occurred, and the excavation was about twenty-four feet deep, three-inch plank were required, and in one or two places where deeper excavation was called for, four-inch plank were ordered to be used. Sheeting was cut to an angle on the bottom edge, and the upper corners of each plank were cut off to decrease the liability of splitting in driving. The driving of the sheeting was done by means of a compressed air power hammer, a portable air-compressor having been installed to supply air for hammers, drills, rivetters, etc. Sheeting was provided with breast pieces of six by six timber. In the open excavation the sheeting was held in place by means of inclined shores running from the breast pieces to a heavy plank platform or foot piece on the ground; foot piece should always be of sufficient area to distribute the load over the ground, and should be well wedged up. Wedges were ordered to be of oak, as it is less liable to split and splinter in driving than the softer woods. The sheeting in the trenches was held in place by means of short lengths of plank run from side to side of trench and wedged tight. The sheeting being complete and the excavation well under way, the permanent work for the protection of the public was started. Up to this time we had depended upon plank railings around the excavation, now we must build sidewalk bridges, with plank steps at each end, with plank railings, and a plank roof heavy enough to protect the passers from any injury caused by any falling building material. The bridges are to be wired for electric light, and have an inner waterproof ceiling. Bridges were built with heavy ten by ten stringers, floor and roof beams three by twelve, spaced two feet on centres, posts ten by ten, with two by six diagonal braces. Floors and roof were of two-inch plank. Inner ceiling was of seven-eighths sheathing, covered with roofing felt. The contractor's office, with an office for the superintendent, was built on top of the bridge. Office was made weather-tight, wired for electric lights, and provided with a telephone. During the progress of the excavation, and while the preparatory work was going on, building materials were steadily arriving on the job, and we must carefully inspect the same. A good quantity of sand had arrived, and was ordered to be piled where it would not get dirt from cart wheels mixed with it, nor be ground up and pulverized by street traffic. By crunching the sand in the hand near the ear, and noting the sound which was hard and grating, it was found to be good and sharp, and an examination under a magnifying glass showed that it was well graded, but rubbing the damp sand on the palm of the hand showed it to be rather dirty and to contain some loam. A sample of the sand was taken and put in a clear glass bottle, and the bottle filled with water nearly to the top and thoroughly shaken together and the mixture allowed to settle; by measuring the column with a rule it was found that the sand measured six and one-half inches and the dirt on top measured one-half an inch, showing a little over seven per cent of dirt and loam. The contractor agreeing to thoroughly wash the sand, and promising that all future shipments of sand should be cleaner, we agreed to accept it. The broken stone was found to be a very good quality of trap rock, but showed on examination a considerable quantity of crusher dust, and was in consequence ordered to be screened. The stone was ordered in two sizes, that for reinforced work grading from one-eighth inch to three-quarters of an inch in its greatest dimension; that for mass work such as wall footings, under bed of concrete floor in basement, etc., graded up to two inches in its greatest dimension. A carload of cement having arrived, it was brought to the job, and the reports of the mill tests were checked, and the laboratory inspection tags, car initials and numbers were all verified and recorded. The contractor was ordered to put up a weather-proof storage shed, with a good tight floor, raised at least twelve inches above the ground, in which to store the cement. In the total shipment there were found to be a few broken packages; these were put to one side, for immediate use, more preferably in some of the mass concrete which was not subject to very heavy loading. A sufficient supply of materials being now on hand, and the excavation practically completed, concreting can be commenced at once. All of the concrete, according to the specifications, is to be machine mixed, using a rotary batch mixer. The mixer should make not more than ten or twleve revolutions a minute, and not less than twenty-five complete revolutions should be made for each batch. A gong was attached to the mixer, fixed so as to ring when the fixed number of revolutions had been made. All materials, including the water, must be measured; not over six gallons of water to a bag of cement should be used.

Particular care was taken to note the color of each batch as it comes from the mixer, as uniformity of color must be insisted upon. The concrete for the beds under the column grillage, for all wall footings, and for the under beds of concrete floors will all be mass concrete, and it was specified to

be mixed one part Portland cement, three parts sand, and five parts broken stone. After the concrete was mixed we were very particular in seeing that it was deposited in place as quickly as possible, and that at all times there were a sufficient number of laborers on the job to take the concrete as fast as it leaves the mixer and wheel it to the points where it is to be placed, and that other laborers are ready to ram it into place, being very careful to see that no concrete is used that has been discharged from the mixer over twenty-five minutes. A careful watch was kept on all barrows and buggies to see that no lumps of concrete were allowed to remain in them, and we made it a rule that all receptacles were thoroughly cleaned at the cessation of work.

All pipe trenches in basement and sub-basement, and all sump pits will be lined with concrete, and all foundations for pumps, filters, and other machinery will be formed of concrete. While the work of placing the concrete was progressing, the piles are being driven in that portion of the foundations where piling was found to be necessary on account of the poor bearing value of the soil. The system of piling finally selected was one in which the pile is formed by driving a collapsible steel mandrel, encased in a spirally reinforced sheet steel shell, then withdrawing the collapsed mandrel, after sufficient penetration had been secured, and filling the shells with concrete. The piles were driven by means of a steam pile-driver, mounted on a turn-table. The concrete used for filling of the shells was the mixture specified for reinforced work. The space around the heads of piles was filled with concrete to make a bed for the column grillage. As soon as the beds for the grillage had set, the steel erectors commenced to set the grillage, about which more will be said in our next chapter. The grillage was well grouted under with cement grout, composed of one part cement and two parts sand, mixed very wet and poured under the beams. Dams of damp sand should be laid all around the grillage to hold the grout in place until it has set. Each layer of grillage should be filled with concrete after setting; the concrete should be as called for in reinforced concrete. A close watch was kept to see that the concrete was well spaded and rammed in between the beams of grillage to fill all spaces thoroughly. It had been previously decided that that portion of the basement walls which were located over that portion of the lot where the bearing quality of the soil was affected by the presence of the old stream bed, should rest upon concrete beams running from column footing to column footing, instead of the regular wall footings resting upon the earth. This was done to prevent irregular settlement of the walls, which might cause cracking, bulging, and other defects in the walls. These beams, the bottom and side walls of swimming tank, the walls and ceiling of bank and safe-deposit vaults, and the sidewalk vault walls will be of reinforced concrete. Concrete was specified to be mixed in the proportion of one part cement to six parts aggregate, to be measured separately. Proportions to be measured by volume, taking one bag containing ninety-four pounds of cement to equal one cubic foot. The proportions of sand and stone shall be chosen so as to give a concrete of maximum density, but in no case, however, shall the amount of sand be less than forty per cent of the stone.

The reinforcement of the beams will be of structural grade steel, the bars will have a positive mechanical bond, and are to be bent as shown on the detail drawings where required. The reinforcement of the swimming-tank bottom and side walls will consist of two layers of expanded metal, placed one inch from the inside and outside surface of the concrete. The reinforcement of bank and safe-deposit vault walls, roof and floors, will be composed of fifty pound steel rails, set alternate flange to outside and head to outside, lapped over the top and bottom, and bolted together with long steel rods, this reinforcing probably giving the best resistance known to drills and explosives. The reinforcing of sidewalk vault walls will be twelve-inch steel I beams, set six feet on centres, the concrete being filled in between. The lumber for the forms for concrete work having been delivered and inspected, was found to be as specified, a good quality long leaf yellow pine, free from knot-holes, dressed on one side, with the edges dressed to a slight bevel to make tight joints. This is better than twinging and grooving. The bottoms of all beam forms should be of two-inch plank, and the sides of beam forms should be of one and a half inch plank; for all other form work seven-eighths inch lumber will be sufficient. Care must be taken to see that all forms are properly braced, and that they are tightened up with wire ties. Joist for forms should be two by six, spaced from twelve to twenty-four inches apart, depending upon the height of form work, and thoroughly braced.

We were very careful to see that beam forms were properly supported by posts, and that the posts set on bearing platforms on the earth to prevent settlement, and were double-wedged at their feet, so that the work could be set up tight. When the form work was complete the placing of the reinforcing steel should be commenced. We kept a very close watch on this part of the work, checking it very carefully to see that it was done exactly according to the details, and that no deviation was made from the engineers' drawings under any circumstance, as even a slight displacement of the rods materially affects the strength of the concrete. All rods must be properly held in place by means of spacers, and securely wired where necessary; all stirrups must be accurately spaced, as shown on the drawings. Before the pouring of the concrete is started we will look over the forms carefully and see that no shavings, sawdust, or other rubbish are left in them, and have them thoroughly cleaned. More than likely it will be found that the workmen have made them a repository for waste paper, old socks, and the refuse from their dinner-pails. All this must be removed. The forms were ordered to be thoroughly wet down and the pouring of the concrete was commenced. In pouring concrete always start at a time so that beams, slabs, or walls will be completed monolithically, if possible, and if work has to be stopped, always stop in the centre of a beam or panel, as at that point the minimum shearing stresses occur. When pouring concrete spade back the stones so as to give a mortar finish to the face, also puddle concrete to work out the air bubbles. If work has to be stopped for any cause, on resuming work the concrete which has been previously placed shall be roughened and thoroughly cleaned of all foreign matter, drenched and slushed with cement mortar composed of one part Portland cement and two parts sand. If the weather is warm we must see that the exposed surfaces of the concrete are kept damp for three or four days to prevent checking by too rapid setting of the cement. The walls of swimming tank and the walls of bank and safe-deposit vaults shall have at least two expansion joints in their length. Expansion joints should have a key, and be filled in with asphalt. As soon as the under bed of basement and sub-basement floors and the wall footings were in place and set hard, the waterproofing contractor started in on his work, waterproofing the basement and sub-basement floors, pipe trenches, basement walls, area walls, and swimming tank. The waterproofing as called for in the specifications was to be done by the membrane method, using a

heavy saturated roofing felt, weighing not less than fifteen pounds to one hundred square feet of single ply, and the best quality of coal-tar pitch. The under bed of all concrete floors, all pits and trenches, and the tops of all wall footings will be thoroughly coated with hot pitch, well mopped on; over this pitch will be laid five layers of felt, each layer being put down separately and well mopped with pitch. The joints in the felt must be made to lap one-fifth the width of the sheets, and be thoroughly cemented with the pitch. The waterproofing of the floors and the trenches will be continuous, and the waterproofing under the walls will be provided with laps for connecting it to the waterproofing of the floors and the walls. Before the waterproofing under the walls, we must see the bricklayer has laid a stretcher course of brick along the centre line of the walls to form a key, over which the waterproofing must be laid, otherwise the walls may slip on the smooth surface of the waterproofing. Just as soon as the basement and sub-basement floors are waterproofed we must notify the contractor that he must lay the top portion of concrete floors at once, so that the waterproofing will not be damaged. The swimming tank will have five-ply waterproofing on the inside of bottom and walls.

The waterproofing of the basement walls will be done by laying up a four-inch brick wall immediately outside the line of walls and covering this wall with five-ply waterproofing, against which the walls will be built, and the waterproofing will be turned up over the walls at the grade level. While the above work was progressing a quantity of structural steel was being delivered at the job. A sufficient amount being on hand the work of erection will be commenced, about which we will tell in the next chapter.

(*To be continued.*)

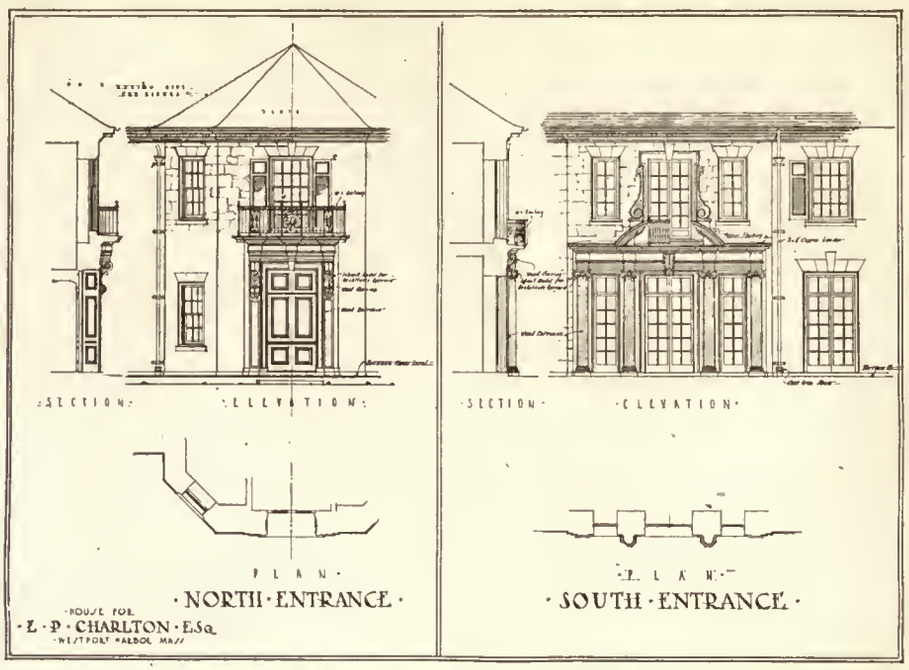
THE HENRY G. THOMPSON & SON COMPANY, NEW HAVEN, CONN. Lockwood, Greene & Co., Engineers.

This plant is for the manufacture of hack saw blades. They also make power hack saw machines. The general offices of the company are also accommodated on the first floor. The other space is occupied by the machine tools and other equipment used in the manufacture of their product.

The building is 67 feet 4 inches wide, 180 feet long, four stories and basement, flat slab type, reinforced concrete construction. Basement story height is 11 feet top to top, the fourth floor 15 feet, others 12 feet. Bays 16 feet square approximately. There are two stair towers, one each on the front and rear left hand corners of the building. An elevator and toilet tower is provided in the middle of the left-hand side of the building. This building was completed in the fall of 1917, in almost five months time.

The Country Home of Earle P. Charlton, Esq., at Westport Harbor, Mass.

THE problem of what style of architecture shall be used for a country house is one which often puzzles both client and architect. In the case of the Charlton house at Westport Harbor, Mass., the topography and character of the location determined this all-important question. An open hill meadow running out to a rocky point in one direction and gently sloping down to a broad beach in the other, seemed the most suitable location in an estate of many acres. The view from this hill-top is one of the most extensive and beautiful on the north Atlantic coast. To take advantage of this view, and to tie the house in with its surroundings, a field-stone house of many windows and numerous porches and terraces, was designed. A house which, although large and containing many rooms, should not appear pretentious or out of place in a seashore colony of simple houses. For this reason the roof lines were kept low and the plan compact. The field-stones of the walls of the house, which were laid to a flat surface, were selected for color and shape. To relieve any possible effect of formality, all of the trim and details of this otherwise fireproof house were carried out in wood painted buff. To make the house inconspicuous, the broad expanse of the low roofs was covered with heavy gray-green slate of varying widths and shades. A circular drive laid out on a level lawn makes a fitting approach to the main entrance door, which was designed in the style of the English Renaissance, the forerunner and inspiration of American colonial architecture. This entrance opens into a panelled vestibule, through the glass doors of which stretches a wide hall. This hall extends through the entire house, making it possible to have casement doors opening onto a broad stone terrace overlooking the sea. In this hall the color-scheme is cream and mulberry. On the left of this hall a spacious living-room occupies the entire north end of the first floor. This room, which has long casement windows on three sides, is panelled in quartered oak like the main hall, from floor to ceiling, and is decorated in a simple adaptation of the Italian Renaissance style, in shades of blue and gray. On either side of a large Italian consol mantelpiece in this room, panels of simple grill-work conceal the pipes of an Aeolian organ. At the east end of this living-room large doors lead out into covered porches on the two corners of the house, and into a sun-room in the centre. This sun-room is treated with lattice-work painted warm gray over rough plaster walls.

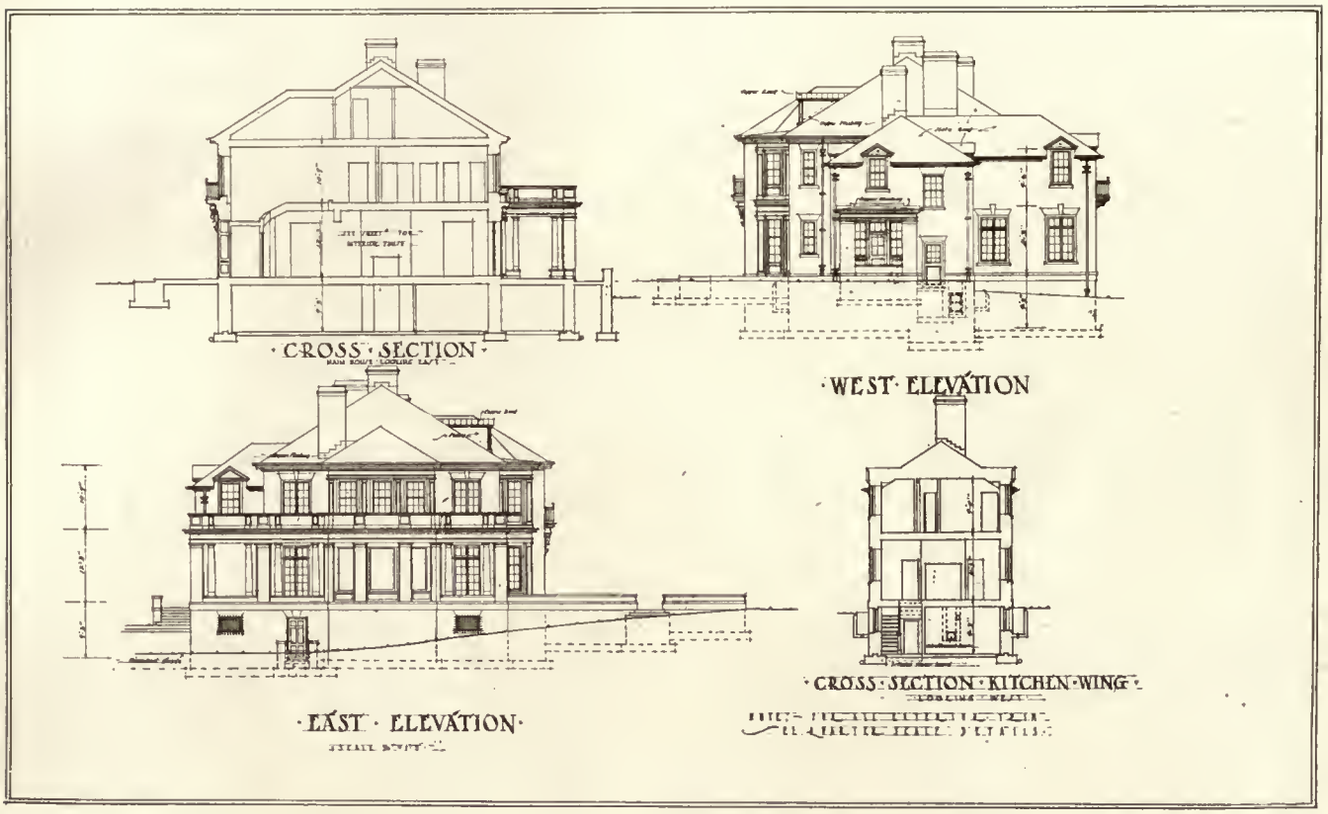


The furnishings and rugs are in green and old rose. Many palms and ferns in old Chinese jars give a touch of out-of-door informality to this interesting sun-room. At the right of the main hall is the large dining-room, and a panelled corridor with vaulted ceiling which leads to a small library, a locker-room, and the service end of the house. The dining-room is panelled in Italian walnut from floor to ceiling. The heavy cornice of the panelling conceals the indirect lighting, which at night illumines the dull gilded ceiling above. The furniture of this room is in the Italian style, and the decorations are carried out in tones of old gold and brown. The keynote of this color-scheme is taken from the unusually beautiful Convent Sienna marble of which the mantelpiece is made. Three large south windows in this dining-room look off over terraces and sloping lawns to the broad expanse of blue ocean, while a fourth door leads through a panelled alcove into a breakfast porch. A gray-green tile floor and gray-green painted lattice-work on walls and ceiling make a suitable setting for yellow painted furniture, window hangings, and gay flowering vines. This breakfast porch opens, as do all the other principal rooms on the first floor of the house, upon a broad stone terrace. From this terrace double steps lead down onto a formal semicircular terrace, laid out with box-bordered paths and hedges. An old Italian well-head makes a point of interest in the centre of this terrace, and a low fountain breaks the wall of the double steps leading up to the main house terrace.

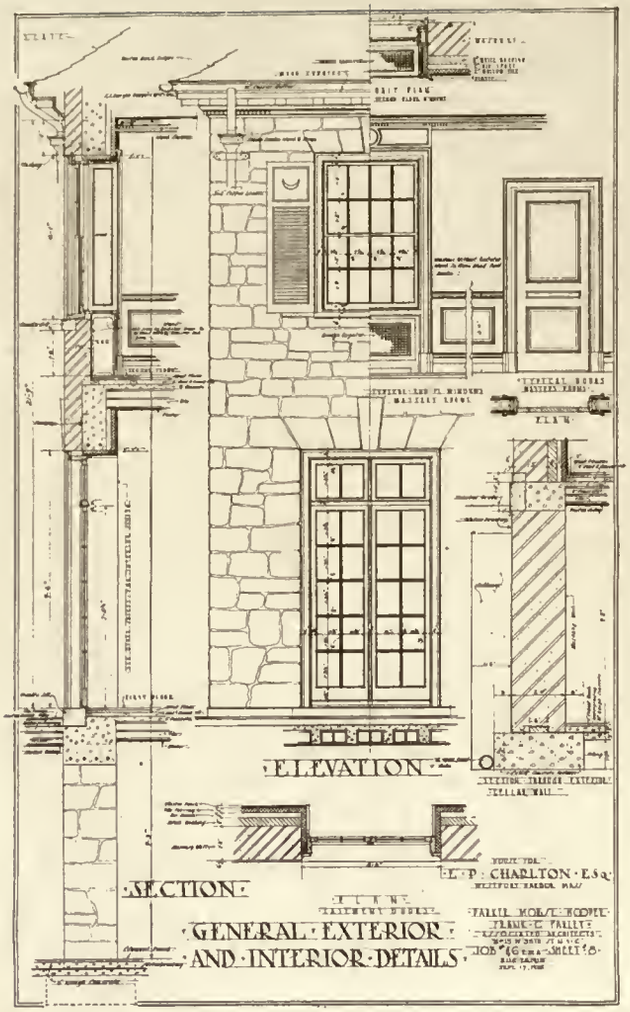
A broad English stairway leads up around the entrance bay of the house, to a long hall on the second floor. From this hall open out seven spacious bedroom suits, housekeeper's and linen rooms, and the servants' quarters in the low-ceiled second floor of the western wing of the house. The bedrooms are all panelled and painted and decorated in different harmonious color-schemes. Four rooms are furnished and decorated in one of the French, two in a simple modern English, and one in an adaptation of the Chinese style.

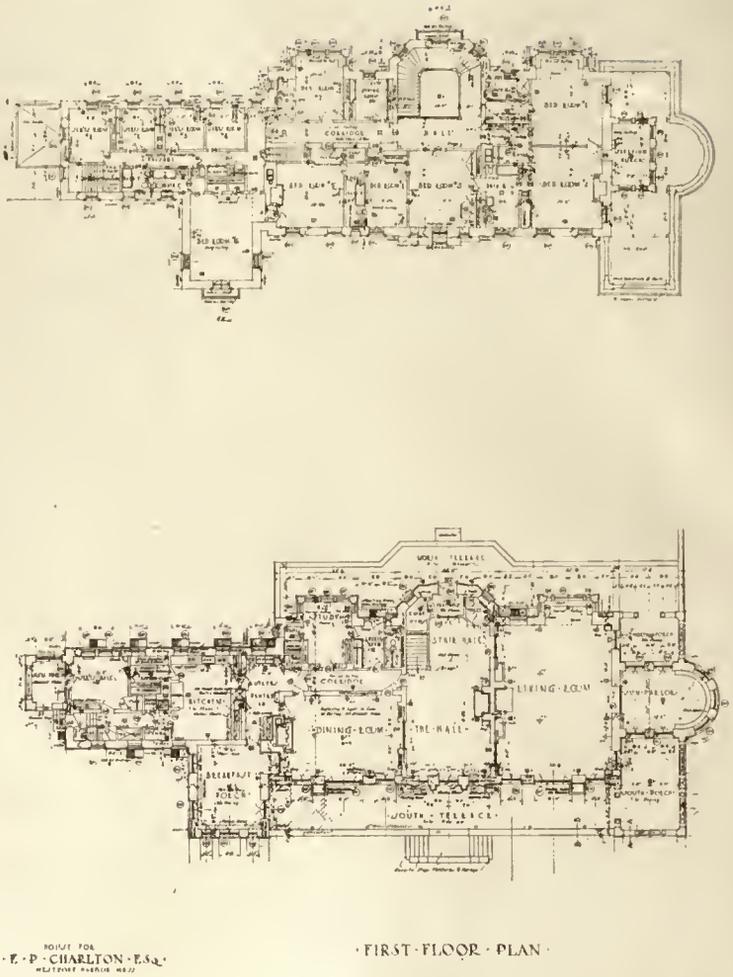
In the basement of the house, besides large laundry, service and heating accommodations, a panelled billiard-room and bowling-alley have been included.

Among the many modern conveniences of the house might be mentioned a coal-lift, a clothes-chute, electrical washing and refrigeration machinery, thermostatic regulation of heat, intercommunicating telephones, wall and silver safes, and the latest type of sewerage disposal systems.


CROSS SECTION
WEST ELEVATION
EAST ELEVATION
CROSS SECTION KITCHEN WING

NORTH ELEVATION
SOUTH ELEVATION
E. P. CHARLTON ESQ.
PARKER MORSE HOOPER
FRANK C FARLEY
ASSOCIATED ARCHITECT
JOB #46
SHEET #5





Building Costs in England and France Are Relatively Higher than in the United States

In France the houses destroyed and damaged beyond ordinary repairs within the devastated area may be taken as the measure of the present shortage. This would approximate 410,000 homes. In Great Britain 450,000 would probably represent the actual need.

Prior to the war, a house which in Great Britain or France would have cost $2,000 would have footed up about $3,000 in the United States. As a result of the war, more radical advances have taken place in Europe than in America, and the present cost of building in both Great Britain and France is about three times the pre-war cost, while that in America is approximately double. This puts America on an approximate parity with these two countries, and the house above mentioned would cost practically $6,000 in all three countries.

In Great Britain practically all dwelling-houses, wherever situated, are of solid masonry construction—stone or brick—and, save in the cities, are without cellars or basements. There is no air-space for insulation against temperature and moisture, and the inside plastering is placed directly on the surface. The flooring is usually of brick, tile, or stone. The water-supply is generally limited to an outside tap. Even in the rather attractive Liverpool tenements, built by the municipality in 1885, there are no direct water or sewer connections, both being located in the hallways outside, and for the use of two to four families. Most of the workmen's tenements in Great Britain are without yard-space. The heating is from open fires, and the window-spaces are, in general, rather small.

Paris to Replace Hovels of "Zoniers"

WHEN THE FORTIFICATIONS OF THE FRENCH CAPITAL ARE REMOVED DWELLINGS FOR WORKERS WILL BE BUILT BY THE GOVERNMENT

IN the world's building plans after the war the recognition of the relation of housing to morals as well as efficiency is being widely recognized, according to reports that have come into the U. S. Department of Labor. Included in the plan for the destruction of the fortifications of Paris is a scheme for the erection of modern dwellings for workers on a part of the ground which will remain in the possession of the city.

On the tract extending about half a mile beyond the fortifications small houses, many of them scarcely more than huts, have multiplied as a result of a government prohibition against the building of structures of any height or size lest such should become vantage points for possible foes. While some of the "zoniers" have erected neat cottages, the region has become the haunt of many criminals and miserable persons who live in mere hovels.

According to the new plan, now under consideration, rows of bungalows and attractive houses, as well as community buildings, are contemplated, and a boulevard to follow the line of the fortifications will be constructed.

MADISON, CONN.

WARREN, R. I.

PORTSMOUTH, N. H.

FREDERICKSBURG, VA.

NEWBURYPORT, MASS.

FREDERICK, MD.

OLD COLONIAL DOORWAYS.

From the collection of Albert G. Robinson, Author of "Old New England Doorways."

Some Reasons for High Building Costs

IT is obvious that the current high cost of living is due to a general advance in the market price of probably every natural and manufactured product required by all of the human activities, and the failure of wages and income of large numbers of people to increase in the same ratio. The advance is most noticeable to the mass of the population in everything required for the three most necessary elements of existence, viz., food, clothing, and shelter. Inasmuch as architects are particularly interested in the production of the latter, I will confine my remarks to this element of living costs.

It does not seem to be appreciated that almost every article requires shelter of some kind for its production or storage before it is consumed, so that the increased cost of factories, warehouses, elevators, stores, etc., must enter in the cost of such products. Rent or interest for such buildings as well as taxes, up-keep, fuel, light, water, insurance, etc., etc., are large factors.

We who are better acquainted with the increases in cost which have taken place in buildings in the past few years will find these understandable and a fruitful subject for examination.

Many builders remember that good carpenters fitted and hung ten ordinary hardwood doors in eight hours when they were receiving thirty-five cents per hour in the early nineties; at the same time they mortised the lock, applied bolts and thresholds in one-half hour on each door, and some of the best carpenters would even hang as many as twelve to fourteen ordinary hardwood doors, with three cutts to each door, in a day.

The writer remembers that carpenters hung as many as eleven heavy flush veneered hardwood doors in eight hours in a large building he designed and supervised in the middle nineties. At the same time rough lumber was obtained at $15.00 per thousand, including the siding for frame buildings. Maple flooring, scraped slightly, was figured at $22.00 per thousand and oak flooring laid, scraped and sand papered, $30.00 per thousand. Those were fair figures which left the contractor a little gain on each item.

It is well within the recollection of builders in this city that it was customary for masons to lay two thousand and sometimes two thousand five hundred brick in a working day of ten hours; for cement finishers to finish two thousand square feet of floor in a day's work.

To-day we find that only about one-third of this amount of work is performed by the journeymen in eight hours. The decrease of work performed was gradual for a long time, but has grown more rapidly in the last ten years.

Carpenters' wages have advanced from thirty-five cents to eighty cents per hour, and it may be almost three times as great as the first figure when the current strike is settled. The wages of bricklayers, laborers, stone-cutters, etc., have not increased to as great an extent, but have almost doubled.

To-day, when none of the craftsmen will do as much work as they did at that time, the same amount of work is costing almost three times as much.

If everybody does not produce as much as they did when prices were lower than they are now, the cost of living will never approach the old level again. Large numbers of people cannot reduce their output without affecting themselves and all others, and it is obvious that the effect of shorter hours, which are demanded almost universally, and the reduction of work performed has reduced the total volume to such an extent that the demand has exceeded the supply and increased the cost.

In view of reduced production and higher wages of building mechanics, also the labor cost of preparing and transporting materials, which has increased in a similar ratio, the cost of shelter of the same quantity and quality has probably increased upward of 100 per cent in a few years.

Many people who are suffering the most, the laborer, mechanic, and other persons of small or moderate income who are raising the loudest objections, generally by striking for higher wages, do not seem to appreciate, or are not willing to admit, if they do appreciate it, that these very acts are, to a considerable extent, the cause of the constant rise in prices, affecting them as well as all other people.

Undoubtedly, profiteering in its generally accepted meaning is also a big factor, but it is afforded a secure screen by the actual increase in the cost of production.

The demands made by the state, in the form of excessive conveniences, in plumbing, lighting, and ventilation of workshops, largely due to lobbying labor and its biased representatives, supported by illogical requirements made by health officers, antiquated building ordinances, and other code requirements which were seemingly worded to protect a particular set of building material dealers or journeymen, also add to the cost of every building in order that the occupant may obtain a proper return and obviously are also large elements of higher costs.

It must be remembered that in addition to reduced production the economic effects of the war will stay with us, perhaps, for a long time, and that the cost of living cannot and will not recede until Europe is restored as a producer of food and all other forms of wealth.

RICHARD E. SCHMIDT, F. A. I. A.

From "Bulletin of Illinois Society of Architects."

Announcements

The Aberthaw Construction Company, of Boston, Mass., have recently opened a permanent office in Buffalo, N. Y., at 918 Ellicott Square. As the builders of the Turbine Plant of the Bethlehem Shipbuilding Corporation at Buffalo, and other work, the company has for some time been represented in this city and this fact is one of the reasons for the opening of a permanent office. Mr. H. C. Heddinger, who has been with the Aberthaw organization for some time, will be in charge.

Mr. Joseph Della Valle and Mr. Toby Vece, architects, announce the opening of their offices at 865 Chapel Street, New Haven, Conn. Manufacturers' catalogues and samples are requested.

William Lyon Somerville, architect, formerly partner in the firm of Murphy & Dana, of New York City, wishes to announce the opening of his office in the Imperial Bank Building, corner of Yonge and Bloor streets, Toronto.

The Dawn of the American Renaissance

By David Varon

THIS age is proclaimed by many, and not without good reasons, the greatest period of history. Think of it. Mankind undertook, and carried its enterprise to success, the clipping of the talons of the German Eagle. It has thereby made the world safe for democracy. The same mankind undertook things never dreamed before—except by the illustrious Da Vinci—air ventures, the crossing of continents and oceans on flying-machines. Our country and England are first to be covered with the glory of such feats.

By proclaiming this age the greatest of history it is virtually the eulogy of science that is sung by every enthusiast. No one can blame them. Everybody should grow enthusiastic about these great achievements of our fellow beings. But while the great public raves about the flying across because he practically sees it, he is unable to rejoice over some event of equal importance, and that is the advent of the American Renaissance.

It requires very little foresight to see it dawn, nor is it necessary to resort, in order to announce its advent, to dreams or miracles. For we can read its coming through the light of history. It is enough that we believe in the continuous ascendancy of man, ever since he came on the planet. The present readjustment may take a few years, when most of the horrors will be forgotten and life will resume its natural run onward.

Some people are inclined to believe that on account of the horrors of the great world war art will be side-tracked for many years to come. Now, it has been demonstrated on the contrary that art, and great art especially, lives on war, or rather, always on strong emotional events, such as heroic actions. Far from killing it, war always nourished it. On one hand we find the influence of the art of the invaded country on the conqueror who, upon his return home, feels eager to surround himself with more imposing apparel. On the other hand, every great war was an occasion for kindling anew the feeling of patriotism. (Though it might sometimes be termed hatred. I have no doubt but within a few years we shall see in every nook of Germany a number of monuments the aim of which will be the strengthening of the national aspirations, or feeding the popular hatred, and thereby preparing for revenge.) What contributed mostly to give France so many great works of architecture and sculpture if not the great struggles she had to sustain against all the beleaguered nations?

Appalling as the number of dead in this war may seem, yet in comparison with the population of the present day it is probably less than the havoc wrought by plagues in times gone by. Labor troubles have existed ever since unskilled people worked under the leadership of clever ones. We find them recorded in the history of Rome, when the plebeians rebelled against the patricians, and during the Jaquerie in the fifteenth century, etc. Things were readjusted, thanks to the energy of the leaders and also to time, the great healer.

In the meanwhile, art kept always alive though with varying fortune. Then, the natural inference to be drawn from this would be that if the flourishing of art is in direct ratio to the intensity of the forces giving it birth, we may well expect a splendid crop out of these present events.

Once we are ushered into this period of creative art, what shall its tendency be? It is hard, and it would be preposterous, to foresee it, otherwise art would not be itself, for as a rule it is an expression of the period. But we may foresee a Renaissance, that is, at least in the sense that the whole nation will have reconquered itself from the keen materialism into which it was thrown by the very doing its share in making democracy a reality, that is, helping the many to at least exist materially as did formerly the few. Now the time has come when the masses are no longer satisfied with merely existing. The soul of a working man as well as that of the aristocrat has cravings which must be attended to, a thirst for the beautiful that must be quenched.

We could hasten the coming of the new era and we also could retard it. The latter is the easiest thing; just to let things go as they are, that is, allowing the minds to consider the means as the end, and let the bulk of the population work merely for material pursuits, limiting thereby their life's enjoyment to the material. It is doubtful that such a trend of mind would do much to help the creating of lasting works of art. On the other hand, we can surely quicken the coming of the new era by stimulating the patriotism of the coming generation. We have all reasons to be proud of the achievements of our country in the last decade, especially in the latter years. The magnificent self-denial with which our heroes faced steel and fire ought to be recorded in memorials worthy of the deeds.

In this connection, I would say that though many of these memorials ought to be practical, useful, yet a good many of them should be solely devoted to one single purpose, that of commemorating the idea of self-sacrifice. There is a limit to everything, even to the sense of practicality. The men who fell on the battle-field did so without expecting any reward except the spiritual joy of having done their duty. Likewise the monuments representative of these heroic actions could and should be in many instances erected in the only thought of commemorating their splendid achievements. Of course, there are examples in several countries in which the memorials assume very pleasing shapes, such as public fountains, decorative monuments in parks, etc., and there is no reason why we should not imitate the same method here. In fact, if there is one way of fighting the evils inherent to modern Babylons, it seems it would be by the scattering on most of our public places such beautiful and commemorative works of art. So far, if one walks down Broadway early in the morning there is only one thing which gives him a sense of art, or rather a warning against being too deeply merged in materialism, and that is the little chime of Trinity Church, as well as the several tombstones to be seen in its yard.

This Renaissance whose birth may be traced to the immortal battle of Verdun, is being nursed at the American University near Paris. What more intimate contact between two sister republics could be imagined? There is nothing more touching than this picture of the American and French youths who fought side by side for the same cause, exchanging their ideas practically on the battle-field. The amount of benefit which is to accrue to both is immeasurable. While French will inject more practicality in their splendid power for theory, America is to increase her enthusiasm for new ideals.

I can see nature herself at work even at home preparing for this great event, when I consider the number of talents

(*Continued on page 292*)

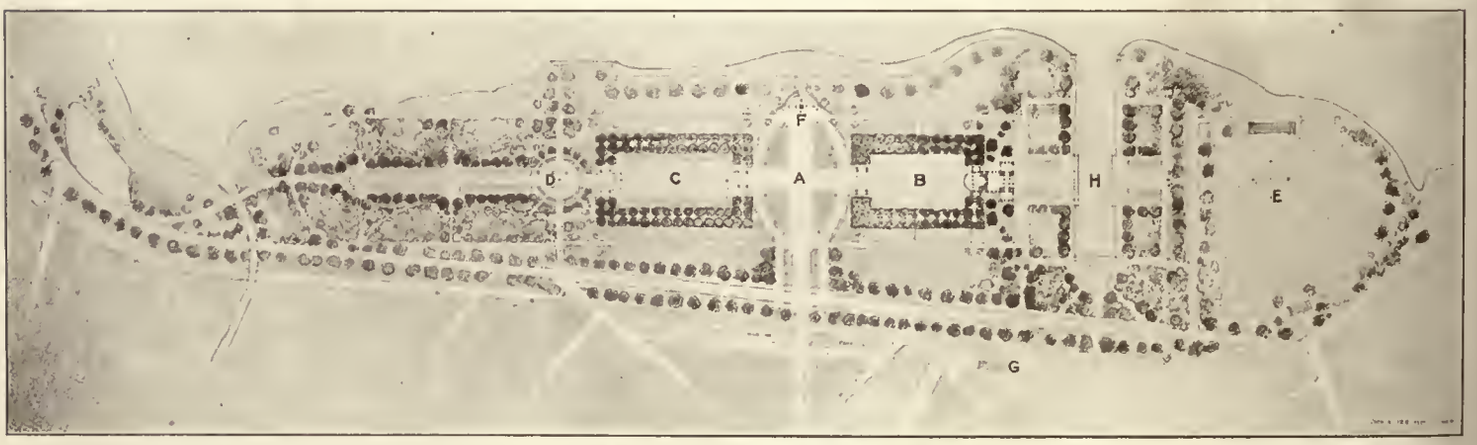
The Plans for the Great Roosevelt Memorial Park

At his Home Town, Oyster Bay, N. Y.

Electus D. Litchfield and Rogers, Architects James L. Greenleaf, Consulting Landscape Architect

IN his lifetime Colonel Roosevelt loved it all, its woods and fields, the shores of Long Island Sound, the flowers and the birds. He loved the outdoor life and he wanted others to love and share and benefit by it. During his lifetime, in fact, he endeavored to obtain an outdoor park for his friends and neighbors at Oyster Bay, and with his passing, a wider significance will be given to this cherished aim of his. The creation of this park, as one phase of a general memorial project, will give his fellow citizens opportunity for rest and recreation and upbuilding of mind and body; and ultimately will perhaps include his estate of Sagamore Hill, which will be preserved like Mount Vernon and Mr. Lincoln's home at Springfield.

On the axis of the main approach, standing out in firm silhouette against the background of the bay and the distant hills of Centre Island, should be a great flagpole with a monumental base, which will be forever reminiscent of the Colonel's intense love for the American flag.



A. Central plaza. B. Outdoor auditorium. C. Pool. D. Fountain. E. Baseball ground and tennis courts. F. Flagpole. G. Railroad station. H. Boat slip and landings.

The site for this memorial has an outlook of great beauty. It may be developed in either a naturalistic or formal manner or there may be a combination of the two. It is important to stress considerably the formal theory of its composition if we are to obtain not only the greatest beauty but a distinctly memorial feeling in the design. Other things being equal, the best things in art are invariably the simplest, and the plans here shown embody but few main elements.

Aside from the playground and amusement space, which is separated from the rest of the composition by the existing canal, which should be improved and beautified, the scheme consists of an outdoor auditorium, the walls being formed by a double colonnade of high-foliaged elms, between whose trunks one may look out upon the bay and toward Sagamore Hill, and whose foliage will cast beautiful shadows upon the green lawn carpet.

The architects have calculated on the use of tall trunked elms for much of the formal part of the composition. At the end of the lagoon there may well be an interesting fountain and beyond it a long approach from the west between thickly planted native American shrubs and low-growing trees, laurel, wild honeysuckle, dogwood, beech, and ash forming a dense dark foliage in brilliant contrast to the gravel walks, the reflection of the sky in the lagoons, and the bright deep blue of the bay itself.

(*Continued from page 289*)

one comes across in our public and high schools. Is it merely to respond to our commercialism and the demands of our industry? No doubt both are entitled to this touch of beauty. Still, who knows but these talents might be unwittingly stifled through improper guidance? Youths, while sometimes self-asserting, often rely on the guidance of their seniors. Oh, what a loss to our art should we fail to use their potentiality.

In what way should we direct the rising generation, so as to get the most of the promising twentieth century? I am satisfied to see men like our State Commissioner of Education, Dr. John H. Finley, return from France so enthusiastic, so full of admiration for the French soul. During his investigation there he found the very roots of that splendid French courage, endurance, and unshakable faith in the school. There too he found the roots of beauty, represented in every subject and more especially by the very handwriting of the lovely French compositions and designs of the children. He took pleasure in sending broadcast a copy of an original composition referring to the war, written by a young girl in her second year in high school, so full of genuine, simple, pure poetry. What may we not expect from our school population when men of this caliber give it its direction. Poetry and talent are here latent in almost any child. It only awaits the spiritual spark to be kindled.

Here we only have to look for some great events to record fittingly. Is it only on the battle-field that we showed ourselves great. What about our other achievements in the realms of science and industry? What of America first crossing the ocean in a seaplane? Should such deeds be belittled? We have all reasons to believe that our leaders in education as well as our statesmen will find in all these records good material for stimulating American patriotism, letters, and arts. We have good reason for being proud of our government, our constitution. Let us give our enthusiasm and gratitude some external form. Let art take care of this. Our poets, our painters, sculptors, and architects will fulfil their duty as did the men in the trenches.

What form may we expect this Renaissance to assume in architecture? Shall it be merely a changing of the elements of present or past architecture, altering here, distorting there, or shall it have its characteristic features? At first thought it looks as though to great deeds, imposing by their hugeness, ought to correspond equally huge works of art, conceived in great units, erected with materials both natural and artificial. In this respect it seems that the Brooklyn Bridge foreran our epoch by spanning, as it were, two continents, and it is no surprise that to-day it should still constitute one of the wonders of the world. But greatness does not necessarily call for hugeness. Great were August's triumphs, yet a Triumphal Arch or a commemorative column was sufficient to record his victories. Rather this Renaissance is to find great inspiration in the work of reconstruction of France. Here is, I think, its main fountain. Here the true spirit of the most fertile epochs in art is born again. In all lines it is realized that if reconstruction is to take place, in a dignified manner to fit the need in spite of the high cost of labor and materials, and considering the pressure of time, then beauty must consist merely in perfection in proportion, be it in architecture or in furniture, of simple harmony in mass, shape, line, and color. This is what is looked after for the great bulk of the huge task the French architectural profession sees ahead. And, as it may be expected, many of our citizens will take advantage of this opportunity to work under the guidance of the French artists. From these teachings, dealing, as a matter of course, with fundamental principles, we may expect great results concerning part of our work of reconstruction. Thanks to the endeavors of our sister republic, we shall have learned to solve our art problems without the borrowing of a foreign formula. The difference between the French Renaissance and the American will be found in the fact that while France got her inspiration from the politically invaded Italy, she will have given ours through the fraternizing of her boys with ours.

The Perfect Dwelling

By Robert Thomson

I WISH to summarize some of the vital requirements which must be met in a dwelling in order to insure perfect health conditions for its occupants:

(1) That in order to maintain the atmosphere of an apartment in a condition which is in all respects fit for human use it is essential that there be a continuous inflow of 3,000 cubic feet of pure, fresh air, and a corresponding outflow of vitiated air, per hour for each adult occupant or his equivalent.

(2) That when either oil or gas is used for lighting purposes fumes are given off which vitiate the air contents of the apartment so seriously that it is essential to take into account this source of pollution, as well as that due to the occupants, when calculating the total volume of the air supply required in a dwelling.

(3) That the extent to which the atmosphere of an apartment is vitiated by either an ordinary paraffin-oil lamp of 16 candle-power, a batswing gas-burner of similar lighting power, or a gas-burner fitted with a Welsbach mantle is equivalent to that caused by 7½, 5, and 3 adults respectively.

(4) That unless the incoming air be warmed before admission, the air contents of a sitting-room cannot in cold weather be renewed oftener than about three times an hour without discomfort to the occupants, and that, therefore, it is necessary to provide in such apartments a minimum of 1,000 cubic feet of air space for each adult occupant or his equivalent.

(5) That if the incoming air supply be suitably warmed before admission the air contents of a sitting-room can be renewed from five to six times an hour without creating discomfort, and that, therefore, a perfect supply of air would be provided for a correspondingly greater number of occupants.

By establishing these scientific facts on that scientific basis scientists have provided the much-needed scientific

(*Continued on page 294*)

STANDARD OIL CLOTH CO., BUCHANAN, N. Y. H. Lansing Quick, Architect. Stone & Webster, Engineers.

OFFICE BUILDING, YOUNGSTOWN SHEET & TUBE CO., YOUNGSTOWN, O. Designed and built by Stone & Webster.

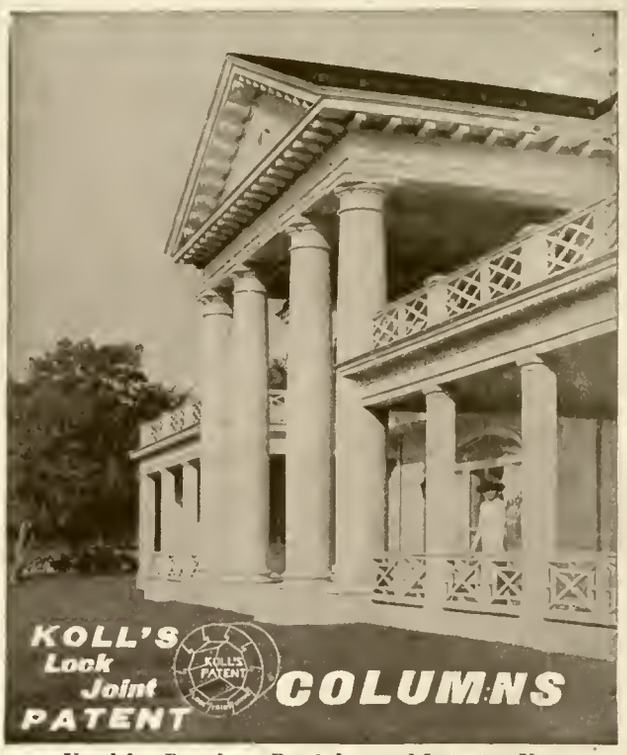
(*Continued from page 292*)

standard by which to determine either (*a*) the sizes of the habitable apartments in any proposed dwelling in which it is desired to provide perfect health conditions for a stated number of occupants or (*b*) the number of occupants which each of the apartments in any dwelling will accommodate under similar conditions, and it is obvious that it can be used with equal facility for any required modification of these conditions.

Had the dwellings of our people been constructed in accordance with the foregoing standard even as recently as fifty years ago, and had the maximum permissible number of occupants in each dwelling been thereafter regulated in conformity therewith, neither the sacrifice of 250,000, or any other number of lives a year, nor the appalling amount of ill health, sorrow, and misery which is inevitable with the existing atrociously planned type of dwellings in which our working classes are forced to use their small, disease-promoting kitchen as their living-room would have been disgracing the civilization of to-day.

That it is economically possible to provide healthy housing, in which the air supply in every respect fully conforms to that scientific standard, is conclusively proved by the accompanying series of plans, showing dwellings of the hitherto unknown actively health-promoting class in which every requirement in regard to health, house-room, office accommodation, comfort, convenience, and economy is fully met.

From "The Building News," London.



Used for Porches, Pergolas and Interior Use

Catalogue B-40 contains very useful information about Exterior and Interior Columns; will be sent to those who want it for 10c in stamps.

NOTE—We have unexcelled facilities for the manufacture of special porch materials to architect's details. Send us your list and plans for estimates.

HARTMANN-SANDERS CO.
2155-2187 Elston Ave., Chicago
New York Office, 6 East 39th Street

St. Paul Athletic Club St. Paul, Minn.

The hollow metal doors and trim

in the building of

The St. Paul Athletic Club

were supplied by

Interior Metal Manufacturing Company

Jamestown New York

THE BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO.

McKim, Mead & White, Architects.

ARCHITECTURE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XL NOVEMBER, 1919 NO. 5

The Butler Art Institute, Youngstown, Ohio

"Pro Bono Publico"

McKim, Mead & White, Architects

THIS beautiful temple of art is the gift of Mr. Joseph G. Butler, Jr., to the city of Youngstown, Ohio.

The building was formally dedicated to the public on October 16, and its opening was marked by an exhibition of Mr. Butler's notable private collection of modern American paintings.

The building is designed in the style of the early Italian Renaissance, and the exterior is of white Georgia marble. It is placed on an imposing site at quite an elevation above the street level, and is surrounded with spacious lawns and appropriate planting. The design is restful, its quiet dignity fulfils the purpose of serious thought and repose in the contemplation of works of art. The main façade gives the impression of a single story, the high-arched portico being the central feature. This portico is vaulted in colored terra-cotta, presenting a sky-blue field with cross ribs of cream. At the intersection of the lateral vaults are inserted portrait heads of two celebrated patrons of the arts during the Italian Renaissance. These are reproduced from medals in the collection of the National Museum in Florence, and represent the heads of Cardinal Giuliano Della Rovers (later Pope Julius the Second), patron of Michael Angelo and Raphael, and of Cosmos Dei Medici, patron of Brunelleschi and Michelozzo. From the central vault hangs an ornamental bronze lantern.

Rear of the Butler Art Institute.

Sculptured statues of Apollo and Minerva, by J. Massey Rhind, are placed in the niches at either side of the entrance.

The writer recalls the striking beauty of the building in the evening, the effective lighting of the portico, the rich blue tile of the ceiling in contrast with the marble and bronze, and the dark copper roof.

The central hall, directly behind the portico, is intended for sculpture, tapestries, and works of art other than paintings, although it is hung temporarily with some large canvases. The walls are of caen stone. The wooden-beamed ceiling is decorated in color in the Italian style. There is a black granite tile border around a mosaic floor, which is laid in Touraine granite with the colored parts in Hispanic glazes and Tuscan inlay decoration.

From the back of the central hall runs a minor hall. Here is the staircase to the second-story gallery. The rear door of this hall leads out to the open court, which is to be developed as a formal Italian garden with fountains, terraces, and a loggia at the extreme end. The designs for the original building show wings for future galleries which will flank the north and south sides of this garden.

The two principal galleries for paintings are entered from the central hall. They are identical in size and treatment, being thirty-four feet six inches wide, forty-three feet four and one-half inches long, and twenty-eight feet high. The black marble doorways indicate entrances to the proposed new wings, which are to be connected with the main building.

The galleries are covered with skylights. Between the skylight and the glass ceiling lights there has been installed a special system for day lighting, known as ventilighter. The daylight is filtered through movable silk vanes in such manner as to avoid the casting of shadows at any time and still provide the exact degree of light desired. The system is controlled and operated from a pocket set flush with, and opening from, the baseboard of the room.

It is truly gratifying to witness Mr. Butler's keen

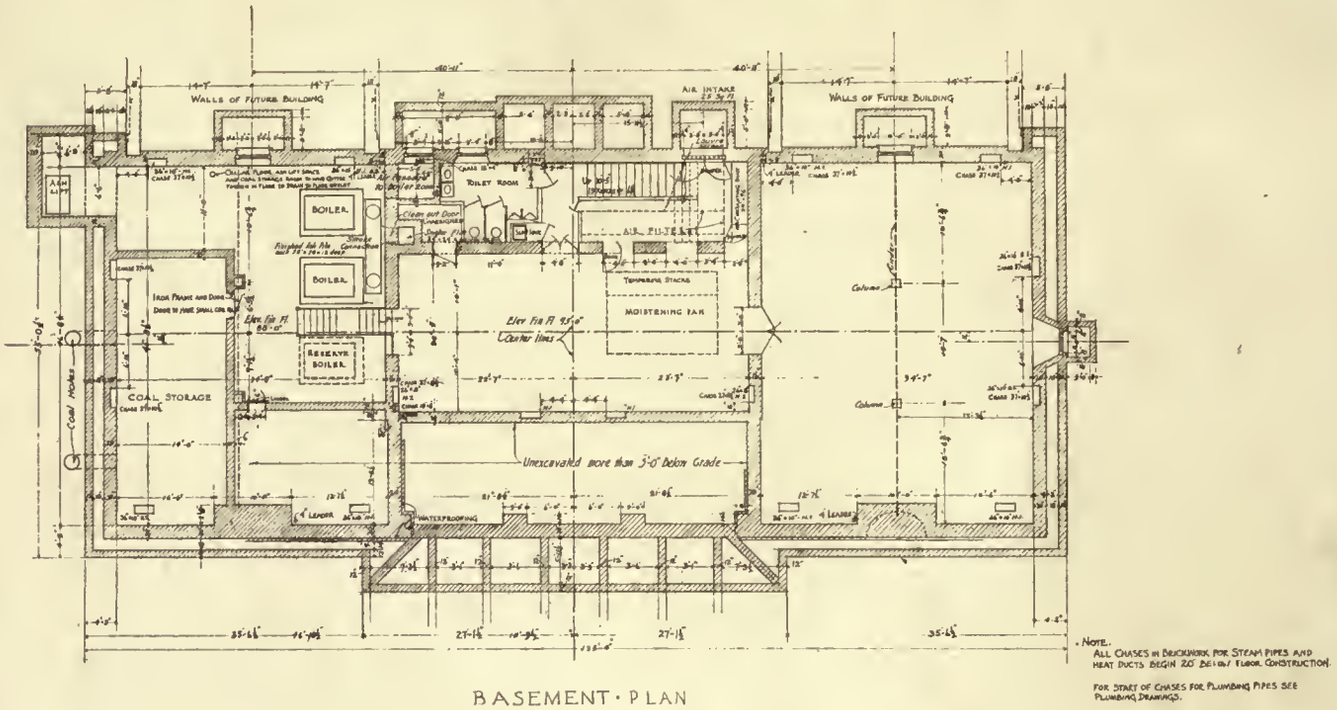
interest in every detail of the building and his broad-minded policy with the architects in obtaining nothing less than perfection in providing a suitable art centre for the community and housing for valuable works of art. In a disastrous fire in his home a few years ago many choice paintings of his original collection were lost, but he has been gradually adding new purchases in anticipation of the completion of the Art Institute, with the hope of sharing in the enjoyment of them with his fellow-townsmen.

Some of the artists have foreign names, but the subjects are American and the work was executed in this country.

It is expected that other collections will be brought to the Institute from time to time, but no outside exhibits will be given space until after the completion of the entire building.

Mr. Butler's devotion to the interests of our American school, his patronage of contemporary American painters, and his willingness to recognize true values without awaiting the verdict of the dealers, will all help to stimulate higher accomplishment.

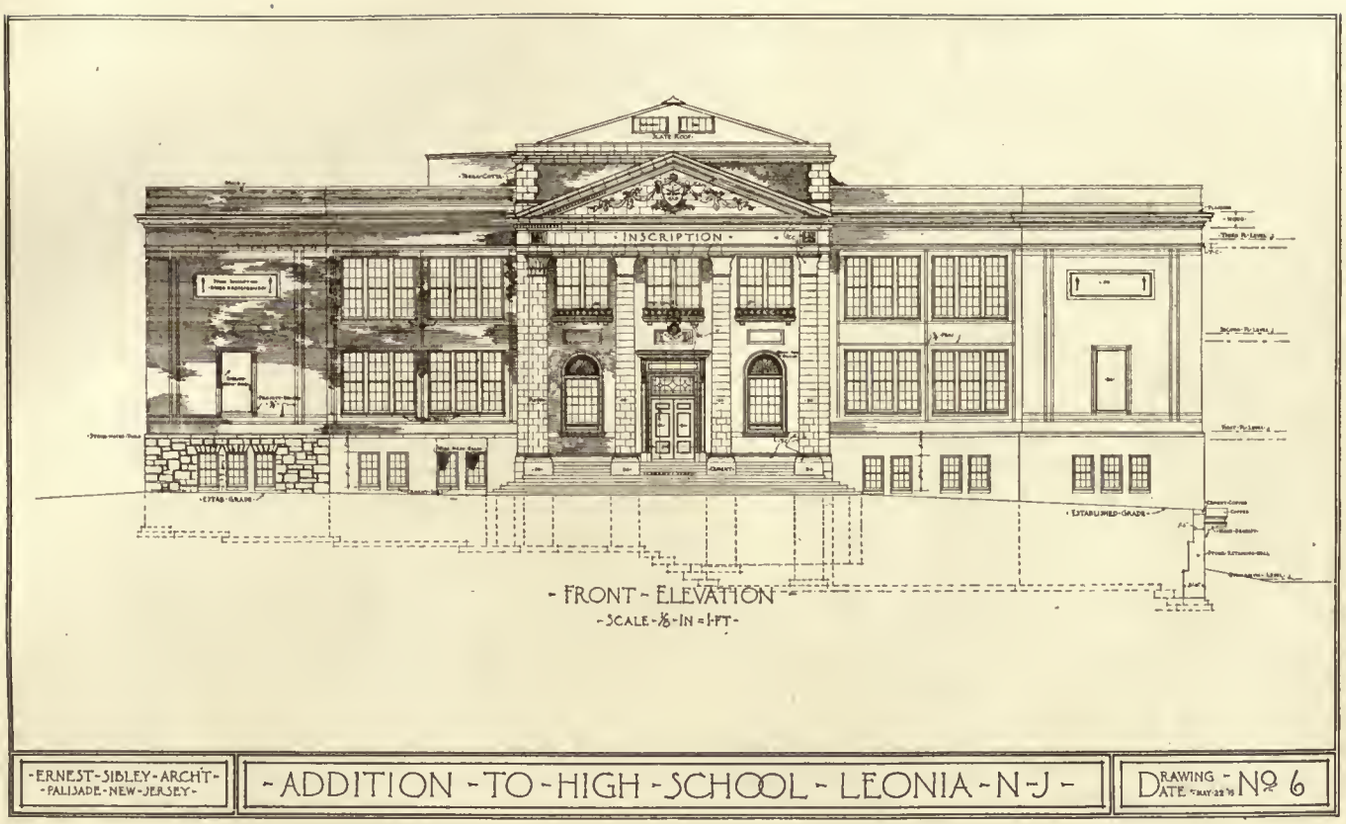
There is an enormous lifting power in Mr. Butler's attitude toward modern American art. It requires daring and sometimes is subject to errors of judgment, but on the whole it gives strength and impetus to the spread of culture and is an inspiration for higher standards of community life.



BASEMENT · PLAN

The following is a complete list of the paintings shown at the Inaugural Exhibition of the Butler Art Institute:

"A Golden Sunset," W. C. Fitler; "A Forest Cathedral," Pieter Van Veen; "Roadside Meeting," Albert P. Tyder; "Jolly Sailors," Edwin A. Abbey; "Lands End—Cornwall," W. T. Richards; "Old Fisherman," Gerritt A. Beneker; "Portrait of Mr. Sharp," Frank Duveneck; "Bridge at Cos Cob," Birge Harrison; "Landscape," Wm. H. Keith; "The Ballet Girl," Louis Kornberg; "An Old Farm," J. Francis Murphy; "A Path Down the Mountains," Chauncey F. Ryder; "Midnight Silence," H. M. Kitchell; "Moonlit Lake," R. A. Blakelock; "The Sonata," Irving R. Wiles; "Red and Gold," Frank W. Benson; "The Silver Moonlight," Jos. H. Boston; "Portrait of My Daughter," Wm. M. Chase; "Snap the Whip," Winslow Homer; "Silvan Stream," John F. Carlson; "Devotion," Wm. M. Chase; "Long Pond," Henry W. Ranger; "Portrait," Gilbert Stuart; "Still Life—Fish," Henry R. Rittenberg; "Sylvia," Wm. Paxton; "Breakers at Floodtide," Frederick J. Waugh; "Sidonie," Edmund Greacen; "Fiesta Day," Victor Higgins; "White and Pure Gold," E. Z. Ipson; "Sicilian Bandit," H. L. Hilderbrandt; "From Hill to Hill," Ben Foster; "Pandora," Mary L. Macomber; "Summer Morning," Leonard Ochtman; "Gold and Old Lace," George Fuller; "Turtle Rock," Pieter Van Veen; "Winter Sunlight," Chas. Rosen; "Mountain Stream," Cullen Yates; "Springtime," Ivan G. Olinsky; "St. Michael's Church," Birge Harrison; "Call of the West Wind," Chas. H. Davis; "Emerald Robe," R. H. Nesbit; "Vermont Woods in Winter," H. F. Waltman; "Silence and Evening List," Gardner Symons; "Silvery Waters," Frank De Haven; "By Drover's Inn," G. Glenn Newell; "An October Day," Pieter Van Veen; "Monarch of All He Surveys," G. Glenn Newell; "The Lady in Blue," Edmund Greacen; "Making Medicine," Irving E. Couse; "A Vision of the Past," Irving E. Couse; "Water Shrine," Irving E. Couse; "Evening Glow," Wm. H. Keith; "The Fortune Teller," F. Luis Mora; "Where Soldiers Sleep and Poppies Grow," Robert Vonnoh; "The Unconquered," G. Glenn Newell; "Twilight," R. A. Blakelock; "Autumn Evening," D. W. Tryon; "Landscape-Summer," Elliott Daingerfield; "West Glow," Elliott Daingerfield; "Tragedy at Sea," Geo. Inness; "Portrait of H. H. Stambaugh," Ivan G. Olinsky; "Kwaunon," John La Farge; "Fairy Tales," Ivan G. Olinsky; "Fairy Stories," Ivan G. Olinsky; "Still Life," Edmund Tarbell; "Portrait of Mrs. Gilbert," Irving R. Wiles; "San Francisco Harbor," N. Hagerup; "Portrait of a Lady," Frank Duveneck; "Marine," Emil Carlsen.



AUDITORIUM, HIGH SCHOOL, LEONIA, N. J. Ernest Sibley, Architect.

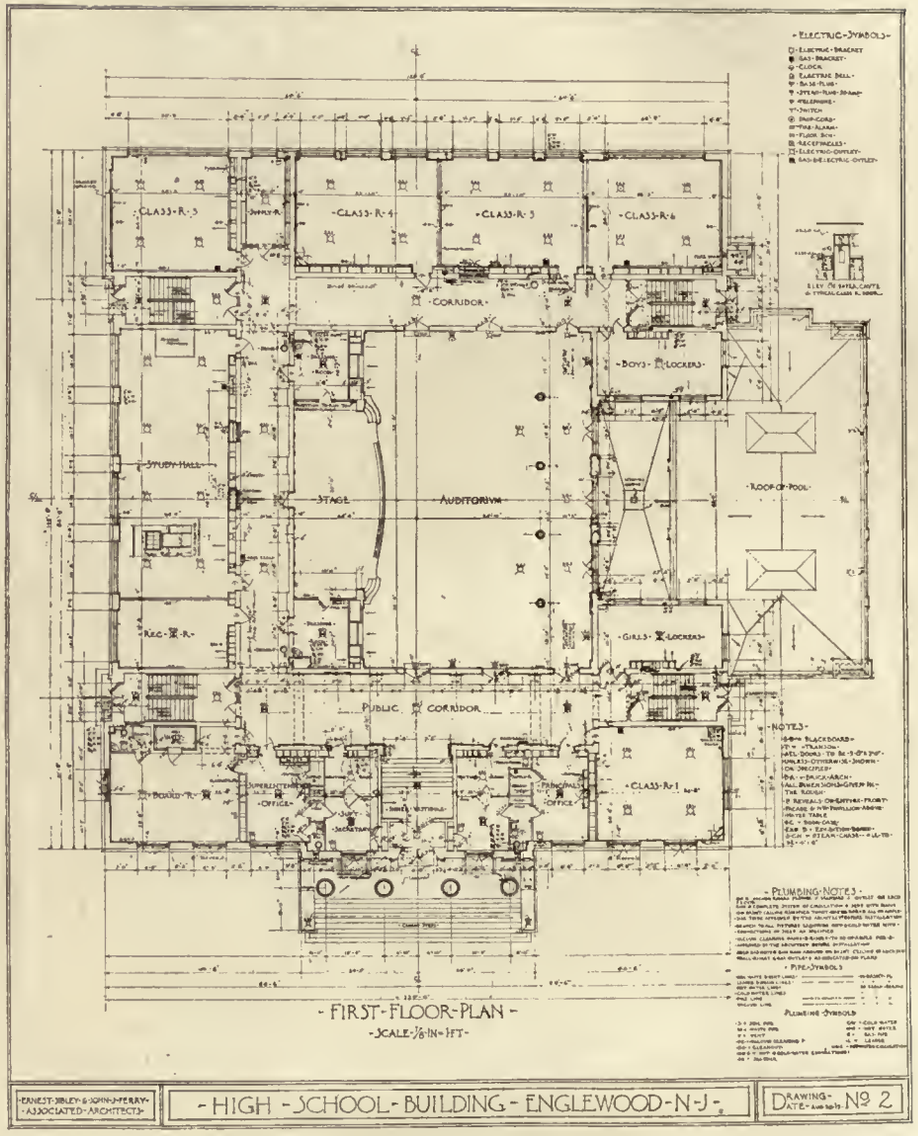
AUDITORIUM.

SWIMMING-POOL.

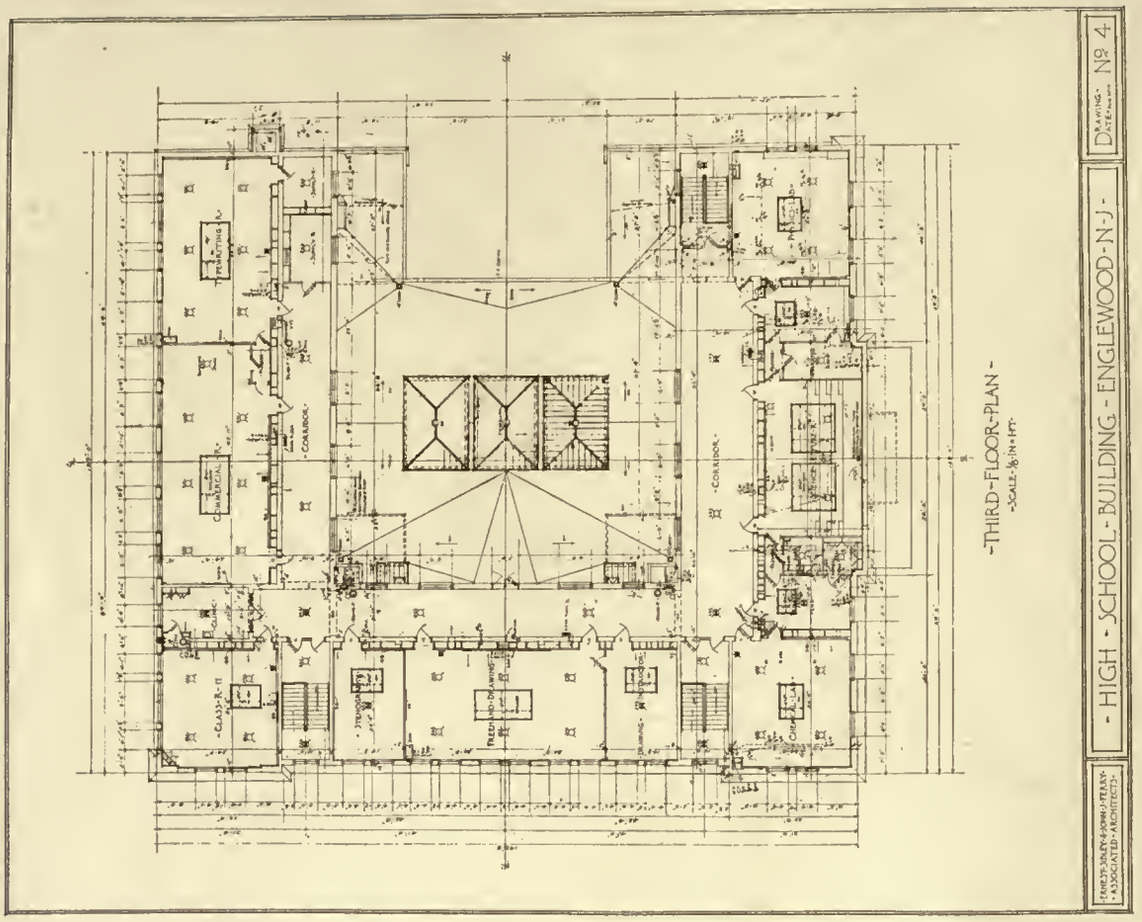
Ernest Sibley and John J. Ferry, Associated Architects.

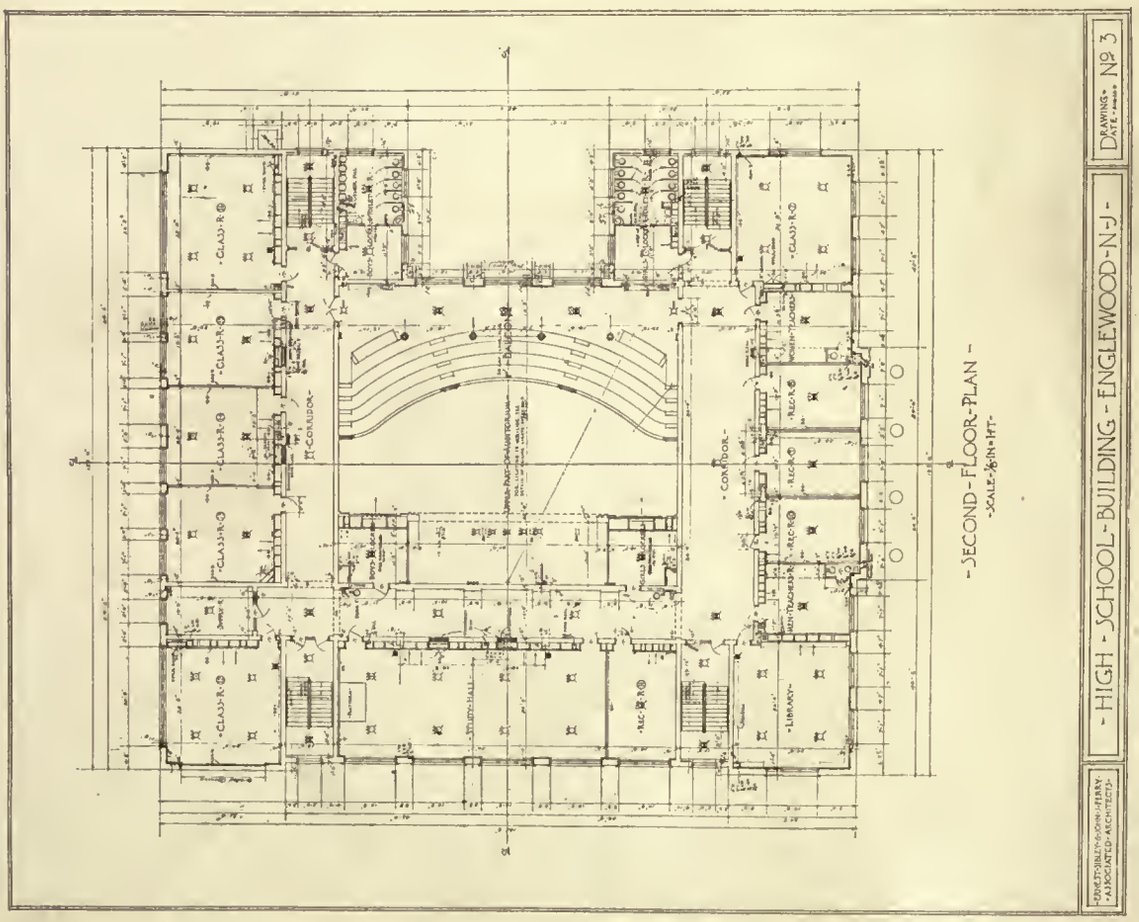
HIGH SCHOOL, ENGLEWOOD, N. J.

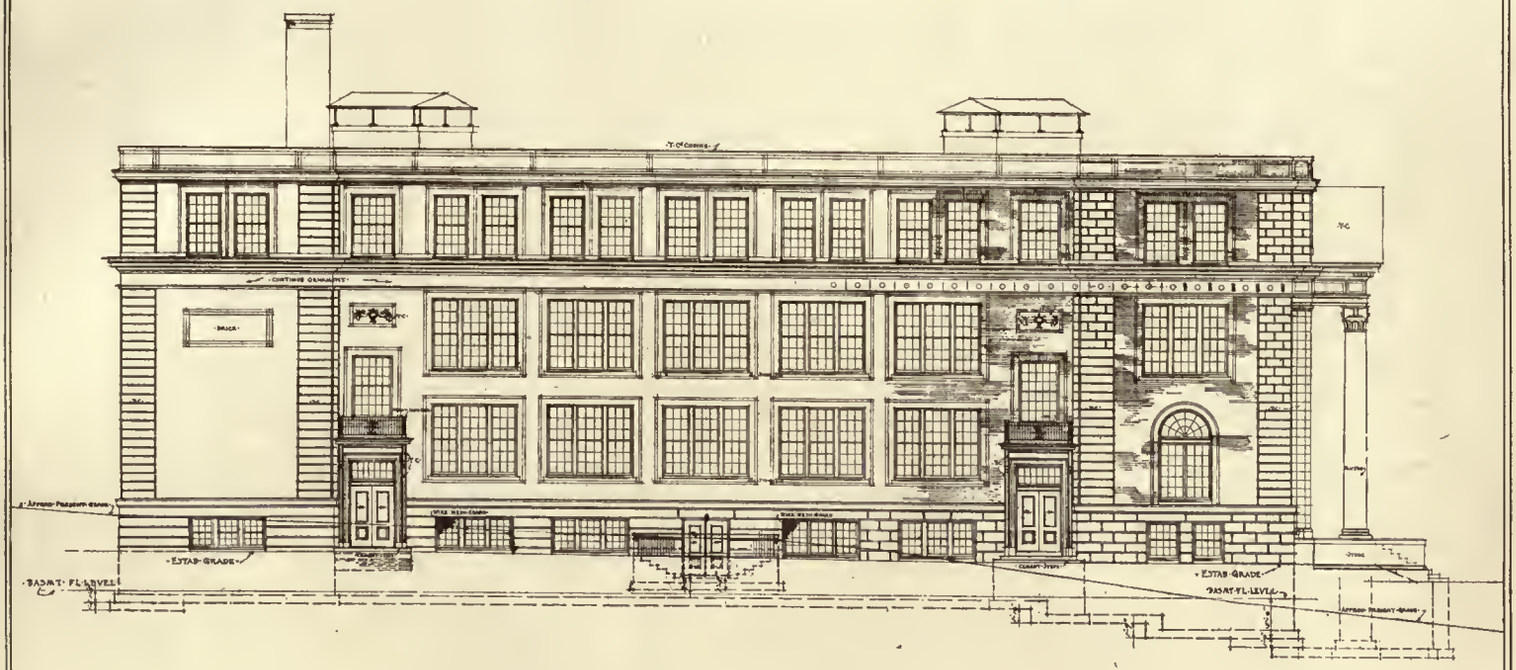
MAIN ENTRANCE, HIGH SCHOOL, ENGLEWOOD, N. J.



Ernest Sibley and John J. Ferry, Associated Architects.


-THIRD-FLOOR-PLAN-
-HIGH-SCHOOL-BUILDING-ENGLEWOOD-N-J-
DRAWING DATE
Nº 4


-SECOND-FLOOR-PLAN-
-HIGH-SCHOOL-BUILDING-ENGLEWOOD-N-J-
DRAWING DATE
Nº 3



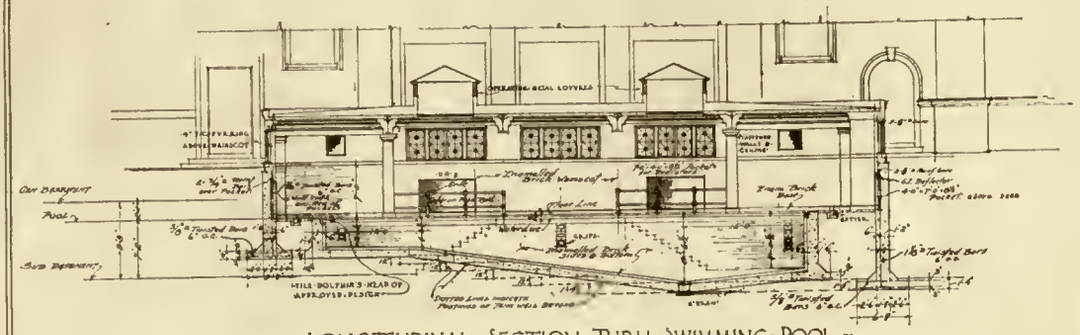
- NORTH - ELEVATION -

- SCALE - ⅛ IN = 1 FT -

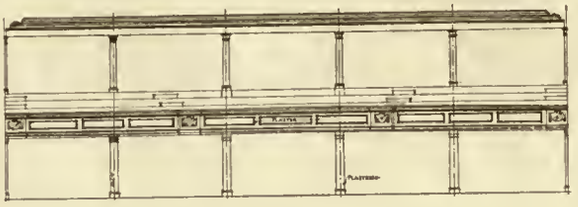
- ENGLE - ST - ELEVATION -

- SCALE - ⅛ IN = 1 FT -

- ERNEST SIBLEY & JOHN J FERRY - ASSOCIATED ARCHITECTS -	- HIGH - SCHOOL - BUILDING - ENGLEWOOD - N J -	DRAWING - DATE - AUG 20 '15 - № 8

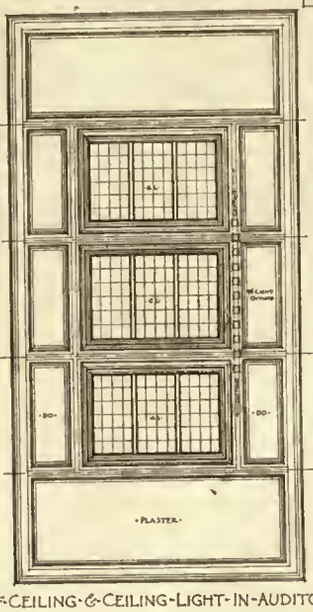


- LONGITUDINAL - SECTION - THRU - SWIMMING - POOL -
- SCALE - 1/8 - IN = 1 - FT -

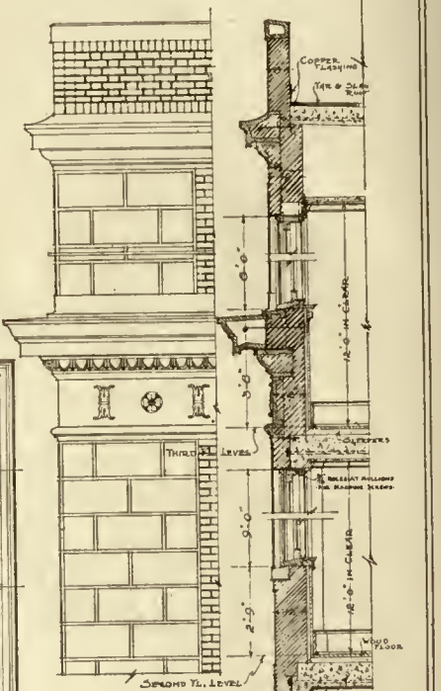


- ELEVATION - OF - BALCONY - FRONT -
- SCALE - 1/8 - IN = 1 - FT -

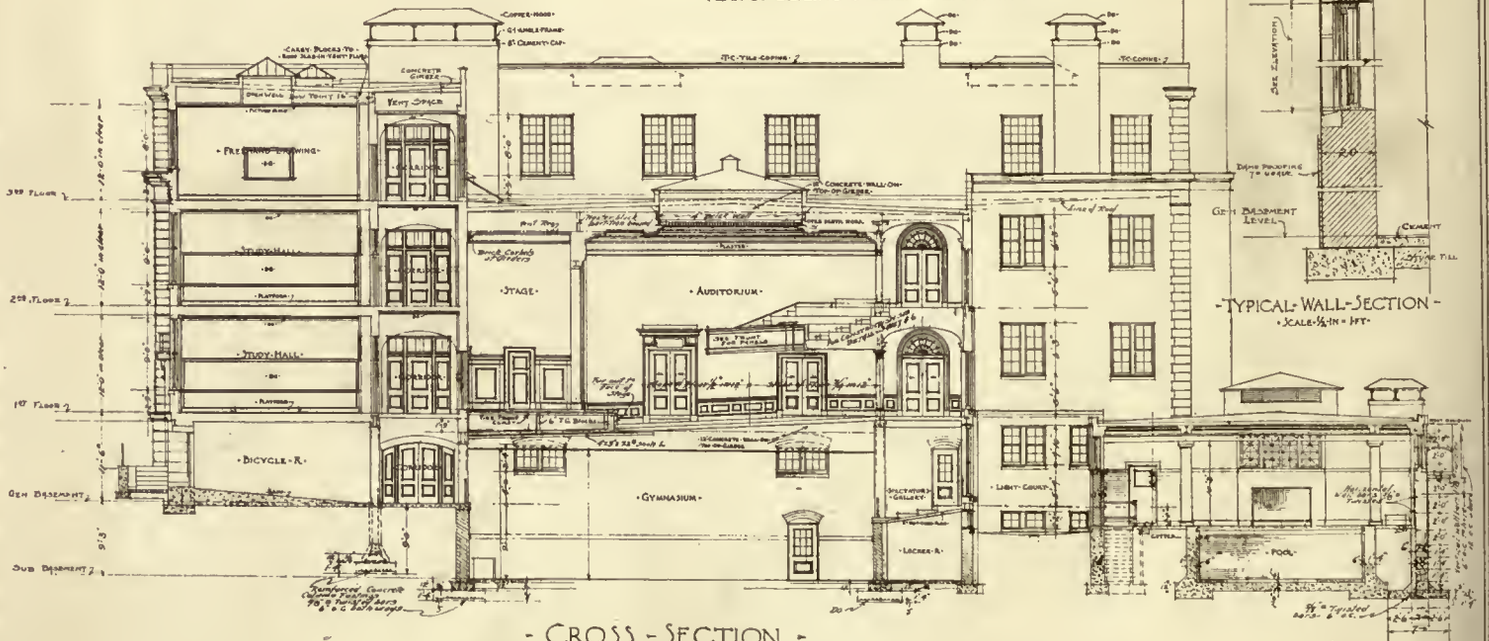
- ELEVATION - OF - MAIN - FL - & - BALCONY - PROMENADE -
- SCALE - 1/8 - IN = 1 - FT -



- PLAN - OF - CEILING - & CEILING - LIGHT - IN - AUDITORIUM -



- TYPICAL - WALL - ELEV -
- SCALE - 1/4 - IN = 1 - FT -



- TYPICAL - WALL - SECTION -
- SCALE - 1/4 - IN = 1 - FT -

- CROSS - SECTION -
- SCALE - 1/8 - IN = 1 - FT -

- ERNEST SIBLEY & JOHN J. FERRY - ASSOCIATED - ARCHITECTS -	- HIGH - SCHOOL - BUILDING - ENGLEWOOD - N. J. -	DRAWING - DATE - Aug. 20/15	№ 7

Interpretation of the Classic Orders of Architecture

By David Varon

WHY the study of the classic orders of architecture is set at the head of the artistic part of the study of architecture is something the average student does not quite understand, and this is why he often complies with his duties in this respect rather perfunctorily.

Yet this study is not only rightly placed but ought to prove fascinating to the student if viewed from the right standpoint.

How should we look at the orders to feel their artistic thrill? Certainly not with the purely intellectual eye sufficient in facing a good piece of engineering, but with our very soul, evoking behind each architectural form the endeavor of one of the finest races on earth on behalf of noble ideals.

Thus, and thus only, can the average student be made to take a deep interest in the study of the orders; and we may also hope to redeem the art of architectural composition which our forefathers possessed almost as an instinct and which was strongly set back by the advent of modern industrialism and commercialism.

We can hardly do any better than to consider the orders in their foremost applications, *i. e.*, the Greek temples. In its simplest definition a temple is nothing but a shrine containing a sacred idol. But here is where the Greek artist was inspired as only great poets can be. For the heretofore ugly representations which were given the Greek myths they substituted the immortal masterpieces of Phidias and his school, which satisfied the popular craving for a concrete representation of their gods in a most uplifting manner. Phidias's Jupiter and Minerva breathed divinity and all the virtues that are fit to inspire youths with noble deeds. There can be no doubt but the sight of them did as much in shaping the morals and the self-control of Greek youths as does in modern time Rude's immortal "Marseillaise" in instilling indomitable courage into modern French youth.

Such achievements could be sheltered only under shrines as worthy of them as the Parthenon and other structures of its kind, breathing the same qualities as the sculptural masterpieces, as far as they could be imparted to brick and stone. The Greek artist, architect, painter, and sculptor were all one, and working for one purpose: the glorification of a god, of an ideal—he was gifted by nature with a very keen analytical mind which enabled him to crown the efforts of preceding generations by finding out in both nature and man the very principles of beauty in its different expressions. In other words, the Greek artist set down the laws of æsthetics which empowered him to create emotions without resorting to symbols, as did the preceding civilizations.

It is such considerations that ought to take hold of us while facing a Greek temple. When the artistic emotion is created and there is genuine enjoyment, then it is time to ask one's self questions about the various orders.

What are they? What do they mean? What signify the words Doric, Ionic, and Corinthian? These words cover quite a ground, and while it is difficult to put the various qualities in common terms, it is possible at least to find some approaching epithets:

DORIC—stern, solid, grave, impressive.

IONIC—grace allied to strength.

CORINTHIAN—majesty, stateliness, and grace.

When these three standard orders were evolved they constituted in a way three primary architectural expressions, even as yellow, blue, and red are the three primary colors.

Like sculpture, which, after a period devoted only to the representations of the gods and all the myths of the time, took interest in man as a common mortal, architecture, too, followed suit in creating edifices of minor importance or rather more human in character. Thus a scale was created with the temples at the top, representative of the highest ideals and the foot the expression of human needs—not excluding beauty. In between figure the combinations of both extremes or the endeavors of material man toward the spiritual.

Thus interpreted, the orders, as we may still see them on some extant edifices, ought to be applied only on such programmes as call for their special qualities of greatness, etc., and never think of applying them on any structure of the commonest character.

But like colors and their combinations, also like the human moods and their expressions, the orders might be put to use in a degree or in combination. The colonial period gives us a delightful illustration of the way in which one may resort to them for a residential programme. Their lightness and the other changes wrought in the classic types is a splendid lesson. Service, truth, and a refined sense of the beautiful contributed these elegant interpretations of the classic examples.

The French Renaissance produced many a masterpiece in which the architect knew exquisitely how to make them fit for humans.

But, furthermore, from the similarity established between our art and sculpture there springs forth a corollary. As the statues of the gods—and for that matter any other famous sculptural work, such as the fighting gladiator—show dignity (or any other such quality proper to the subject) not only on their faces but also in the general attitude of the body, likewise not only the orders—which quite often are merely applied like ornaments—but the masses and outline of the whole structure should bespeak the corresponding character. Thus a very graceful Ionic composition will require not only the presence of the orders—a mere label, as it were—but that the general proportions and silhouette of the plan should as well be in harmony with the principal idea.

That ordinances—which does not necessarily mean orders—are sufficient for producing distinguished effects is illustrated by several splendid examples among which many residential compositions of the latter part of the eighteenth century, namely, the period of Louis XVI. The mere contrasting of rustications with blank surfaces according to certain proportions and a sense of measure proves very effective.

What strength do not the orders, used in their absolute standard form, gain from the self-imposed restriction of the person of taste? Used apropos, their effect is powerful and towers as much above the surroundings as a god or a hero above the common mortals. A sense of discrimination commands that they should not be defiled by being put to use on any programme whatever, no more than certain forms of speech ought to be debased by misusing them, but ought to be seen on structures sheltering objects and purposes

high in the esteem of all, in which the idols of strength and beauty gave place to ideals of justice, humanity, and beauty. Purely utilitarian edifices may claim their share of architectural splendor by observing the same laws of æsthetics in other forms, even as the smith in his garb gathers from it and the radiant beauty of his own muscles the character proper to his own personality and to himself only.

The conclusion to the foregoing may be summed up in the following:

A student architect standing before the orders he is supposed to study ought to ask himself some questions: First, how should I look at them so as to admire them fully and enthuse about them? To this the natural reply is: he only will admire and enthuse about the orders who will look at their applications with the eyes of a poet who can see in the advent of the Doric order the revelation of man to himself, his own power of creating and expressing. Self-assurance is written on the Doric order, grandeur in simplicity, qualities understood by man in full possession of his self, conscious of his powers. These temples ought to be seen also with the imagination of artists so many of whom attempted restorations not only in architectural drawings but in paintings showing those edifices in the centre of popular processions when celebrating the rites of a deity, the return of triumphing soldiers, or when invoking the various powers of nature on behalf of some daring enterprise. There we see the columns of the temple and the other features marking forcefully the rhythm of the marching procession, a rhythm bound to bring about quiet in the mind and self-control (the surest way to success). The same monuments ought to be looked upon with an analytical eye comparing them to the works of Egyptians who were inclined to resort always to natural symbols, whether of strength or delicacy, and then the Doric and the other columns will merge out triumphant as the resultant of rationalism allied to æstheticism. It is the recognition of beauty and strength of material allied to gravity.

Second, the student should inquire where he can look for an inspiration so as to understand still better the works of the past, look at the present and the future with confidence, and be able some day to fly on his own wings. The Greek was an artist, but he, too, must look for inspiration. Where could he find it except in nature and man? He saw mountains and valleys, seas and rivers, fauna and flora. His keen sense of observation made him discover the principles of grace alike in the tiny stem supporting the flower as well as on the human being and meandering stream; likewise he discovered other splendid truths, contrasts, and analogies, which he put to use with so much success.

Admiration of nature in all its forms and creations, poetic thoughts and a noble ambition of contributing beauty to the visible world, these were the Greek artist's guides. They should be ours to-day.

Pre-War Prices and Pre-War Wage Scales Are Out of the Question

REDUCTIONS in steel prices, as announced by the Industrial Board of the Department of Commerce, are held to be no more important to the general business situation, especially in the building and construction industries, than are the Board's statements that present wage levels should not be disturbed and pre-war prices are out of the question.

Since January there have been received in the Department of Labor thousands of letters from architects, building contractors, prospective investors in buildings, and from State and municipal authorities, in which it was represented that uncertainty as to prices and wages, rather than the present high level of prices and wages, was the stubborn obstacle to be eliminated before a general revival of building and construction work would be had.

Recently the Information and Education Service, in the Department of Labor, has been putting out the results of investigations by trained economists, in the price and wages fields. The conclusion has been, and in this conclusion so eminent an authority as Professor Irving Fisher, of Yale University, has concurred, that the popular expectation of a re-establishment of pre-war prices is not justified. It was asserted that wages had not advanced in proportion to living costs, and that while minor price changes might be expected in some fields, to use the language of Professor Fisher: "We are on a permanently higher price level and the sooner business men of the country take this view and adjust themselves to it, the sooner will they save themselves and the Nation from the misfortune which will come, if we persist in our present false hope."

Since the steel industry is one which most profited from the demands of the war, it probably can afford to make a greater reduction in present prices than may be expected in other industries. Building and construction authorities are not, therefore, disposed to believe that subsequent price negotiations by the Industrial Board of the Department of Commerce will develop reductions proportionately as marked as those announced for steel. They assert that the Board's statement, "in view of the higher costs developed throughout the world as a result of the war, a return to anything like pre-war prices is regarded as out of the question," is a sound conclusion and timely corroboration of the statements made by the Department of Labor in its campaign to stimulate building and construction work.

Two departments of the government—the Department of Labor and the Department of Commerce—working independently, have arrived at the same conviction, namely, that the country is on a new price level and to delay business projects in the hope that pre-war prices again are to prevail is to jeopardize the business structure of the country.

Editorial and Other Comment

An Unavoidable Delay

WE ask the indulgence of our readers for the delay in the publication of the October and November numbers of ARCHITECTURE, made unavoidable by the strikes in the printing trades, and assure them that the magazine will hereafter be printed as usual on its own presses with a promise of the prompt issue of future numbers. It will continue to maintain the high standard which has been established in the character of its plates and letter-press and in the quality of the work presented.

Making the Architect Known to the Man on the Street

OF the thousands who follow art in one form or another few are chosen, few of the many achieve either distinction or a fair living wage. There is something in the name artist that to the uninitiated connotes a lot of romance, the right to special privileges, a little altar whereon the dear unknowing and too often unsympathetic public may have the privilege of burning incense. To many young men and women art seems an easy way out of any real purposeful and thoroughly organized effort at hard work, a freedom from the irksomeness of fixed habits and continued and ordered application. And these are of the many that clutter up the art highways, take up much space on the walls of various exhibitions, and deny all the traditions of good art since the world began. The analogy between the painter and the architect need not be dwelt on in these pages. The architect is as much a creator of beauty, as much bound by the rules of composition, lines and form, light and shade and mass, as the man who works with brushes. Where the painter appeals to the few, the architect addresses thousands, but to the comparatively few the artist is known both by his work and his name, and his reputation lives or falls by the quality of his production.

There have been many objections made, but if the name of the architect was blazoned on or even put in some modest corner of the structures he builds it might possibly have a salutary effect. It might at least make him pause, take time for second thought. The architect is too often hidden behind and within the walls of his building. If he were made more widely responsible to the public for the lack of good taste or knowledge, maybe we should be saved from some of the things the architects themselves in later times look back upon with horror and wonder how they could ever have been guilty of them. In only a comparatively few instances have our architects impressed their individuality upon their work, as have certain of the painters. It would be invidious to name names, but one might go about our streets very much as he would about a gallery of modern paintings and without much more than a glance make a pretty fair guess as to the architects of some of the outstanding buildings, those that engage the attention, by their evidences of sound training and good taste. A mere jumble of stylistic details, classic orders piled together, "school stuff" to adorn a tower of business may fool the few unthinking passers-by, but the judgments of a man's peers so generously given and so often with *chastening* effect, to put it mildly, are the ones that most of us take seriously.

It seems to us that there is a fine opportunity in the teaching of art in our schools throughout the country to make more of the history and development of architecture in connection with the study of general history. There are examples on every side that could be pointed out to even the elementary pupils that would excite their interests and help spread the gospel of beauty and the converse in daily life. We cannot all of us own a gallery of paintings or even prints, but Architecture, good, bad, and indifferent, and worse, is ever before our eyes.

The Architect's Office as a Post-Graduate School

"OF particular interest to the architect and his progressive education in his profession is the question of using the office as a continuation school. Of using it thoughtfully, intelligently, systematically, not on the principle that men learn by contact, but that they learn through interest. This is well instanced by one member of the Council, who described the arrangement in his own office, where all employees meet in regular discussion of all the work in progress; where questions are asked and reasons given; where one draughtsman explains what he is trying to do, and another is given the opportunity of sharing his experience. Men do not learn by grinding through one particular job, but by this very process of sharing experience, and of feeling a common interest in the whole work. The architect's office possesses opportunities for education which have never been properly mobilized, I would venture to say, without criticism or blame, simply because it is difficult for most men to become successful teachers, even though they be so inclined. But if a convenient method of using the office as a practical training-school—and what ground could be better for the purpose?—could be put generally into effect, there can be little doubt of the value it would have. Never can we get too much emphasis upon the thought that men learn only through aroused interest. Never, also, will it be possible for graduates from architectural schools to dispense with the continuation school of practical experience. The task of the subcommittee on education will be to discover, if it may, how these continuation schools may be made most helpful, all of which means a greater good for the profession at large and for the future of the building industry."

The Alien Element in Our Labor Strikes

WE have arrived at a difficult state of affairs in about everything that concerns the problem of living and the welfare of the community in general. From the surface indications we have been for a number of years impressed with the utter futility of the favorite political and social slogan of the labor profiteers: "America, the Melting-Pot." We found to the dismay of many optimists that when we needed a great army we had beeen fooling ourselves with an idea. Our melting-pot hadn't melted, and in a time of dire stress we had to teach thousands the language and the

elements of what being an American meant. We are finding out a little late in the day that importing labor by the millions, regardless of quality, regardless of any intelligent effort to teach them our language and our national ideals, has proved in the last analysis the worst of bad business. It worked when working was good, when the country was running smoothly and the spectre of the high cost of living following a world war was not yet in sight. But in time of stress every imported Old World theory of protest against law and order came promptly to the surface, and the old-time American idea of the dignity of labor, of mutual respect between employer and employee, was forgotten.

At the bottom of all our ills in the building trades is the uncertainty of labor, the utter lack of their willingness to perform a duty or the least intention of performing it honorably. Shoddy and Shirk seem to be the bosses, and alien agitators and alien blindly led sheep apparently form the nucleus of all our strikes. The strange part of it all is that the remnant of real Americans still in the ranks of labor permit themselves to be led by Old World ideas, that they can be so blind and so insensible in these times of any sense of patriotism or realization of the country's vital need of working as a unit to make up for lost time. Greater production in every line is the solution of the present high-living costs, and certainly the question of better wages cannot be settled by stopping production, by penalizing capital and jeopardizing investments.

The Teaching Programme of the Massachusetts Institute of Technology

The Editor of Architecture,
Charles Scribner's Sons.

Dear Sir: The Department of Architecture of the Massachusetts Institute of Technology announces its plan of instruction in design that has been developed for the coming year. It is believed to contain certain elements that are new which may be of interest to the members of the architectural profession as well as to prospective students.

The instruction in design has been placed in charge of Professor Gardner, and the following special instructors have been appointed to act in association with him:

Mr. Stephen Codman, associate professor in this department from 1916 to 1918, graduate of Harvard University, with the class of 1890, student at the Ecole des Beaux Arts under Monsieur Blondel, 1889 to 1893. He was in independent practice from 1894 until 1905, and subsequent to 1905 has been a member of the firm of Codman & Despradelle. He is a member of the American Institute of Architects.

Mr. Edwin S. Dodge, graduate of Harvard, class of 1895, graduate of the Massachusetts Institute of Technology, Architectural Department, class of 1897, student at the Ecole des Beaux Arts, 1898 to 1902. He studied in Italy from 1904 until 1912, and has since practised in New York and Boston. He is a member of the American Institute of Architects.

Mr. Ralph H. Doane, graduate of the Massachusetts Institute of Technology, Department of Architecture, 1912, where he was known as one of the most brilliant pupils under Professor Despradelle. He came to the Institute from the office of McKim, Mead & White, and has had experience in various other leading New York offices. He was consulting architect to the Philippine Government, in complete control of all government buildings, parks, and city planning, in the towns, provinces, and insular government. He has recently acted as adviser to the mayor of Boston in connection with the new Housing Ordinances. At present he is in practice for himself, associated with C. Howard Walker & Son. He is a member of the American Institute of Architects.

Mr. Harry C. Stearns, a student at the Massachusetts Institute of Technology, Department of Architecture, from 1914 to 1917, including two years of advanced design. He was formerly a member of the firm and head designer for Willis Polk, also head designer for the D. H. Burnham Co. in San Francisco. He has studied abroad, working under Monsieur Chifflot in Paris. During the war he was construction officer in the Navy. At present he is engaged in private practice and as a designer for Cram & Ferguson.

We believe all of these men have unusual qualifications for teaching, and their professional training has either directly or indirectly the background of the Ecole des Beaux Arts. They have been selected with the view of organizing a teaching staff which shall have a common understanding of the aims and methods of school training in architecture, which will insure a spirit of co-operation, and which will give to the courses in design a degree of homogeneity and continuity never before realized.

The five instructors associated for a common purpose will guarantee a breadth of view obtainable in no other way. They will form a committee, with regular meetings one evening each week, to discuss matters relating to instruction and to act as a jury to grade and criticise the problems. All of the programmes for all grades will be written by one member of the committee. This is a new feature, a most important one, which we believe will insure the correct relations among the programmes and produce a more systematic course in design than is usual in American schools. For this particular work Mr. Codman has been selected because of his fitness, experience, and interest. He will in the main confine his services to the writing of the programmes and to attending the committee and the jury meetings. Messrs. Dodge and Stearns will alternate in the instruction of the fourth and advanced years, and Messrs. Doane and Stearns will deal similarly with the third year. Professor Gardner will take charge of the second-year work, in which he has been so successful in the past.

Since all of the new instructors will continue the active practice of their profession, we believe we have met, at least in part, the oft-occurring criticism that the schools lack contact with actual practice of architecture. The new instructors are anticipating their duties with an enthusiasm which presages for the department a return to the promising outlook which obtained before the outbreak of the war.

We hope to include in this scheme the occasional Joint Problems with the Harvard School and the Architectural Club which have proved so stimulating both to the students and the instructing staffs.

It is to be regretted that owing to exacting professional interests Professor Cram feels that he must sever his connection with the Institute as a member of the faculty, but has consented to continue as a special lecturer, and will still have charge of his courses in Philosophy of Architecture and in History of Mediæval Architecture.

Very truly yours,
W. H. Lawrence.

MAIN ENTRANCE, BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO. McKim, Mead & White, Architects.

NORTH GALLERY.

SCULPTURE GALLERY.

BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO.

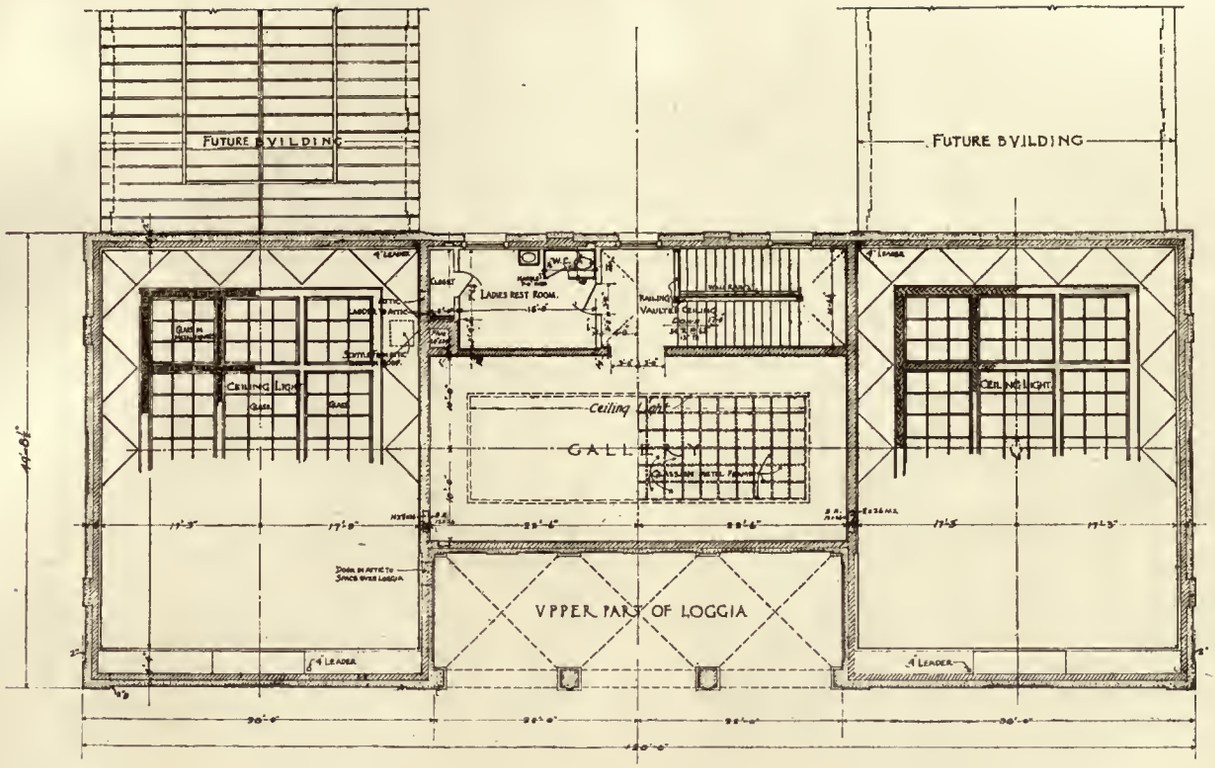
McKim, Mead & White, Architects.

APOLLO.

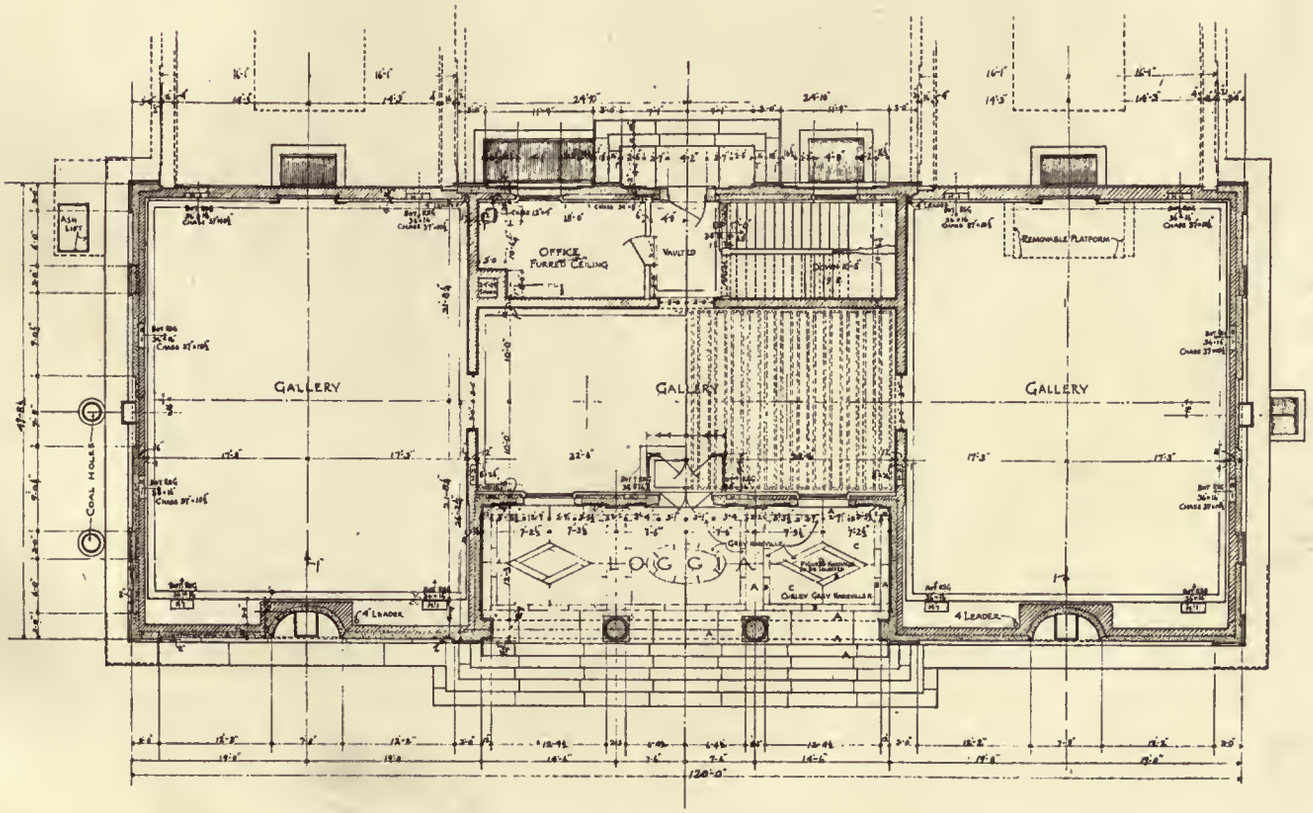
MINERVA.

McKim, Mead & White, Architects.

MARBLE FIGURES IN NICHES, BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO.
By J. Massey Rhind, Sculptor.

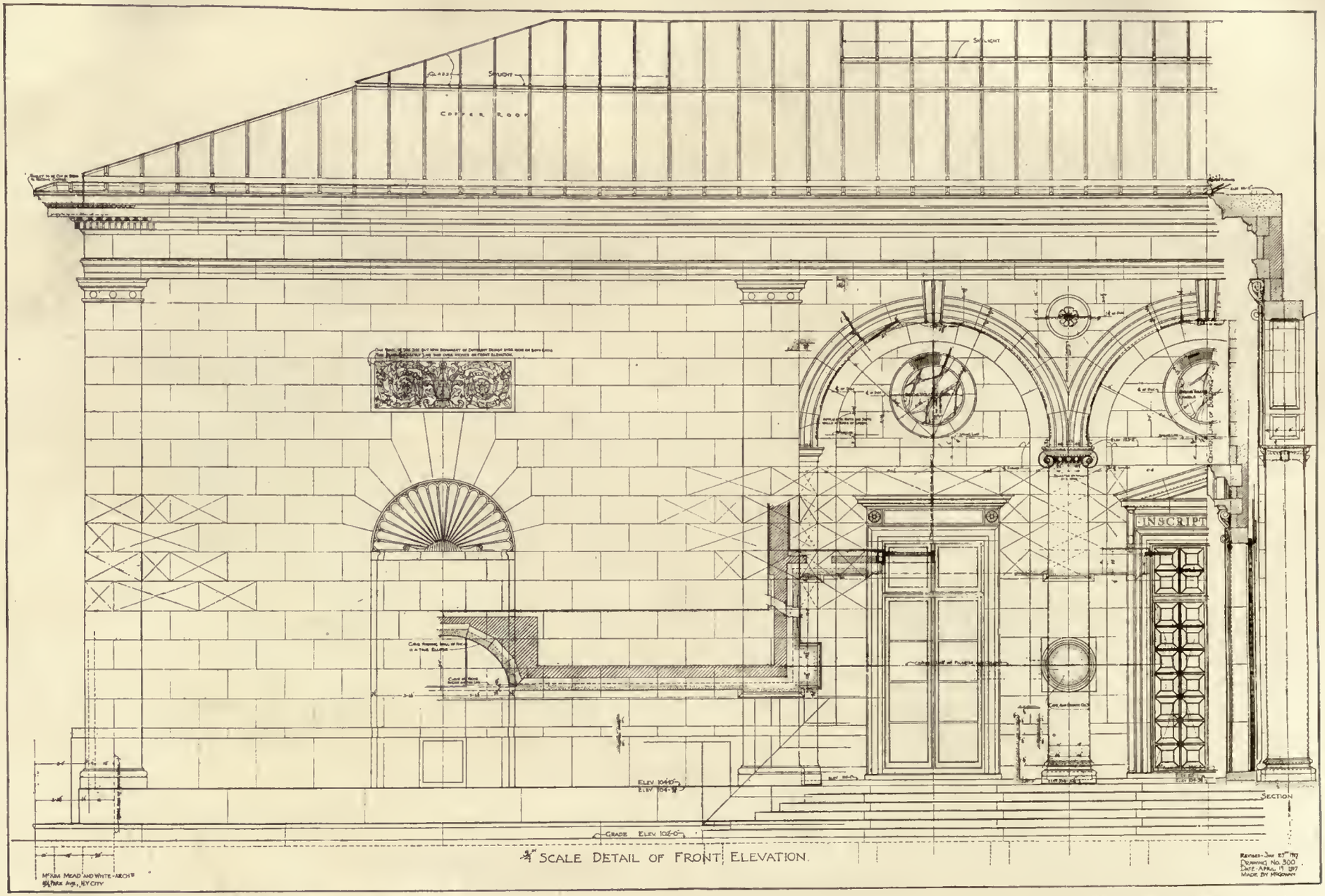


SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

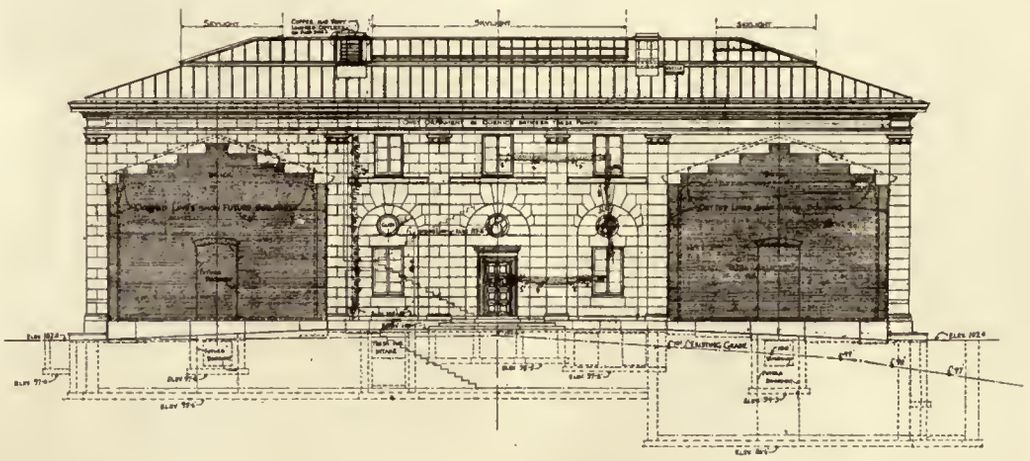


FIRST FLOOR PLAN
SCALE – 1IN = 8FT

BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO. McKim, Mead & White, Architects.



BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO. McKim, Mead & White, Architects.



· REAR · ELEVATION ·
SCALE 1/8" = 1'-0"

· MCKIM · MEAD · AND · WHITE · ARCHITECTS ·
101 · PARK · AVENUE · NEW · YORK · CITY · N Y

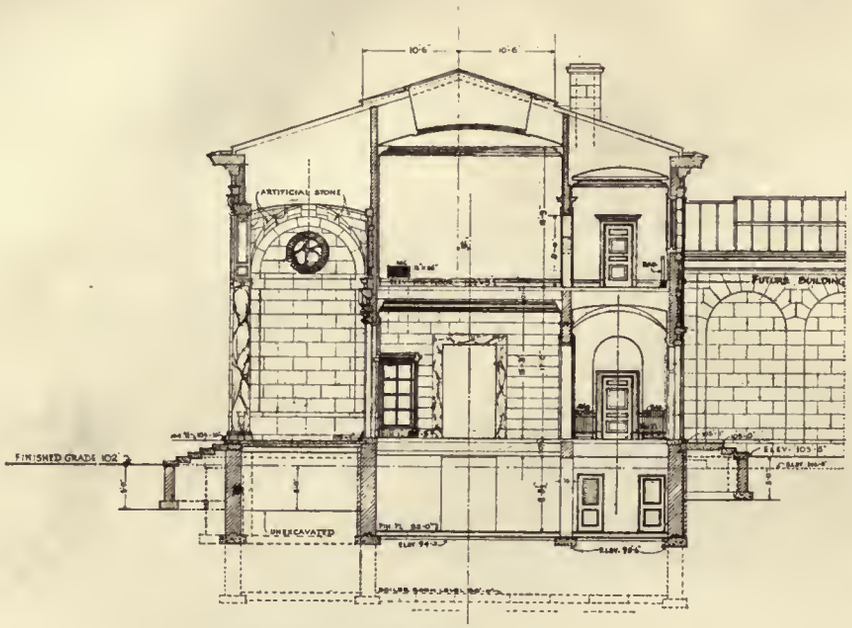
DRAWING NO. 7
DATE - MARCH 14, 1917
MADE BY J.C. McCOWAN

· FRONT · ELEVATION ·
SCALE · 1/8" = 1'-0"

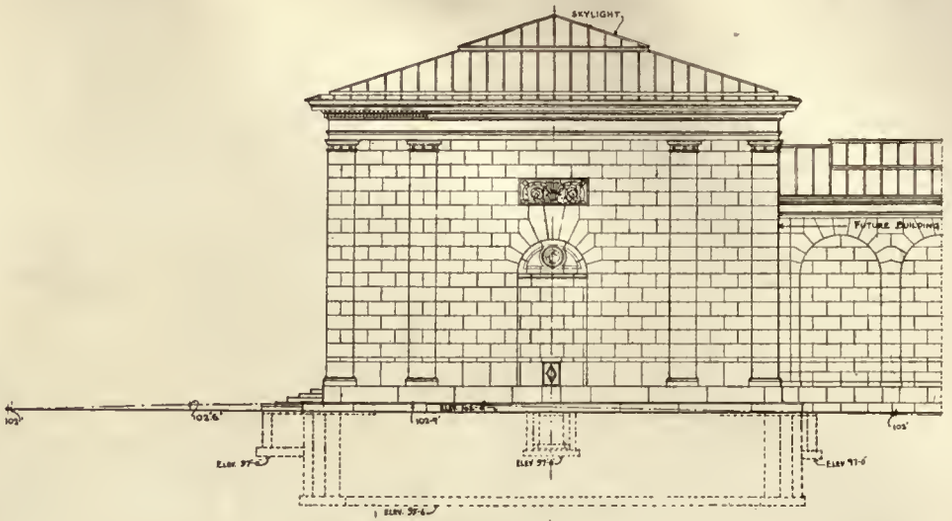
· MCKIM · MEAD · AND · WHITE · ARCHITECTS ·
· 101 · PARK · AVENUE · NEW YORK · CITY ·

DRAWING NO 5
DATE MARCH 1917
MADE BY J.C. McCOWAN

BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO. McKim, Mead & White, Architects.

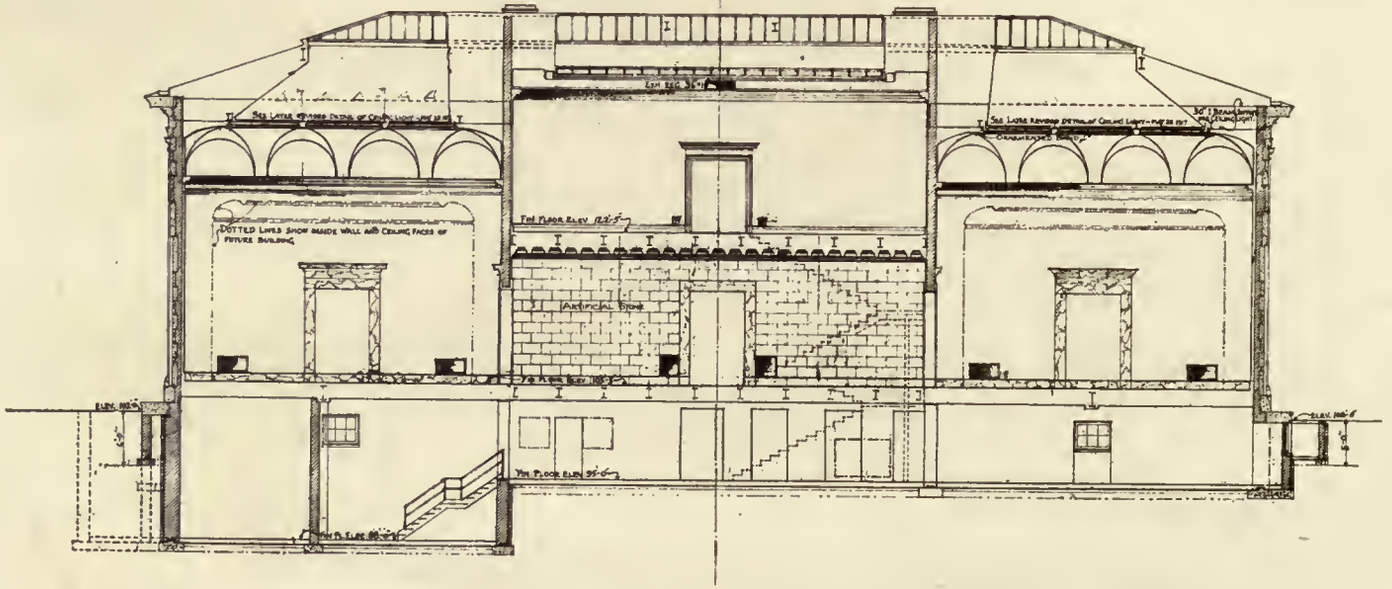


CROSS SECTION



NORTH ELEVATION

LONGITUDINAL SECTION OF END ROOMS SHOWING CEILING LIGHT, COVES, AND CORNICE.



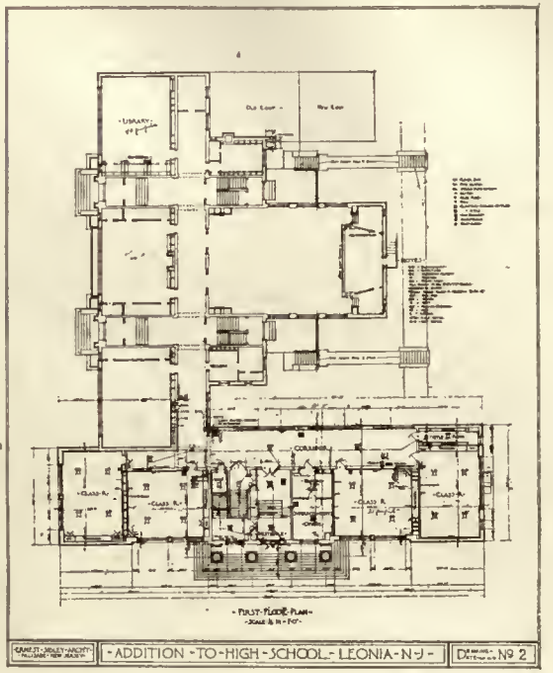
LONGITUDINAL · SECTION
SCALE: 1/8" = 1'-0"

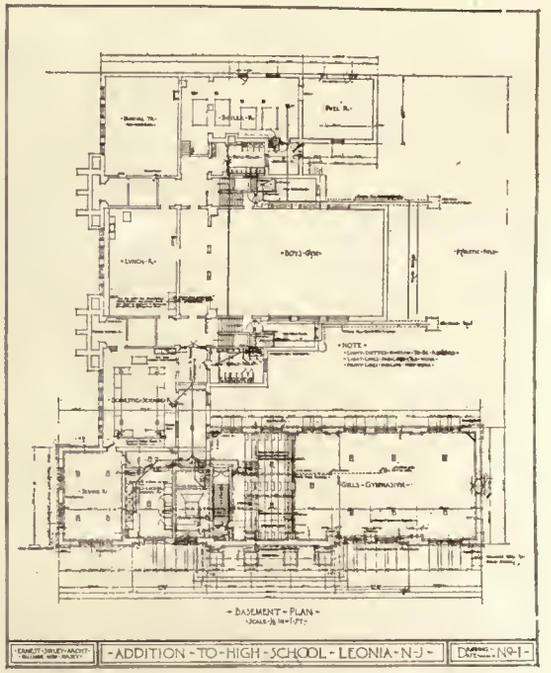
BUTLER ART INSTITUTE, YOUNGSTOWN, OHIO.

McKim, Mead & White, Architects.

HIGH SCHOOL, LEONIA, N. J. Ernest Sibley, Architect.

MAIN ENTRANCE, HIGH SCHOOL, LEONIA, N. J.





Ernest Sibley, Architect.

- ELEVATION -
- SCALE - ½" - 1-0 -

· ERNEST · SIBLEY · · ARCHITECT · · PALISADE · NEW · JERSEY ·	· SCALE · DETAIL · OF · PORTICO · · HIGH · SCHOOL · BUILDING · LEONIA · NEW · JERSEY ·	· DRAWN · BY · G · A · HACKER · · DATE · AUG · 25 · 1915 · · APPROVED · BY ·

HIGH SCHOOL, ENGLEWOOD, N. J.

Ernest Sibley and John J. Ferry, Associated Architects.

THE O. HENRY HOTEL, GREENSBORO, N. C.

W. L. Stoddart, Architect.

ELEVATION, NORTH FRONT, VILLA MARIA ON THE DUNES, SOUTHAMPTON, L. I., N. Y.

E. P. Mellon, Architect.

GENERAL VIEW OF NORTH FRONT.

GARAGE AND CHAUFFEUR'S COTTAGE. E. P. Mellon, Architect.

VILLA MARIA ON THE DUNES, SOUTHAMPTON, L. I., N. Y.

ENTRANCE-GATE.

ENTRANCE TO SERVICE COURT. E. P. Mellon, Architect.

VILLA MARIA ON THE DUNES, SOUTHAMPTON, L. I., N. Y.

· ENTRANCE DOORWAY ·

· VILLA MARIA · *on the Dunes* · SOUTHAMPTON · LI ·

· E · P · MELLON · ARCHITECT ·

The Villa Maria

E. P. Mellon, Architect

THE designing of a building to conform with its natural environment is about the most important problem which an architect has to take into consideration for solution when the problem of designing is presented.

Some of the facts coming under the head of natural environment are those of elevation and contour of the property, as well as the coloring, character, and atmosphere of the property in question and surrounding properties.

This problem of the relation of a building to its natural surroundings has been successfully solved by the architect, E. P. Mellon, which is clearly demonstrated by the result obtained in the Villa Maria, at Southampton, Long Island.

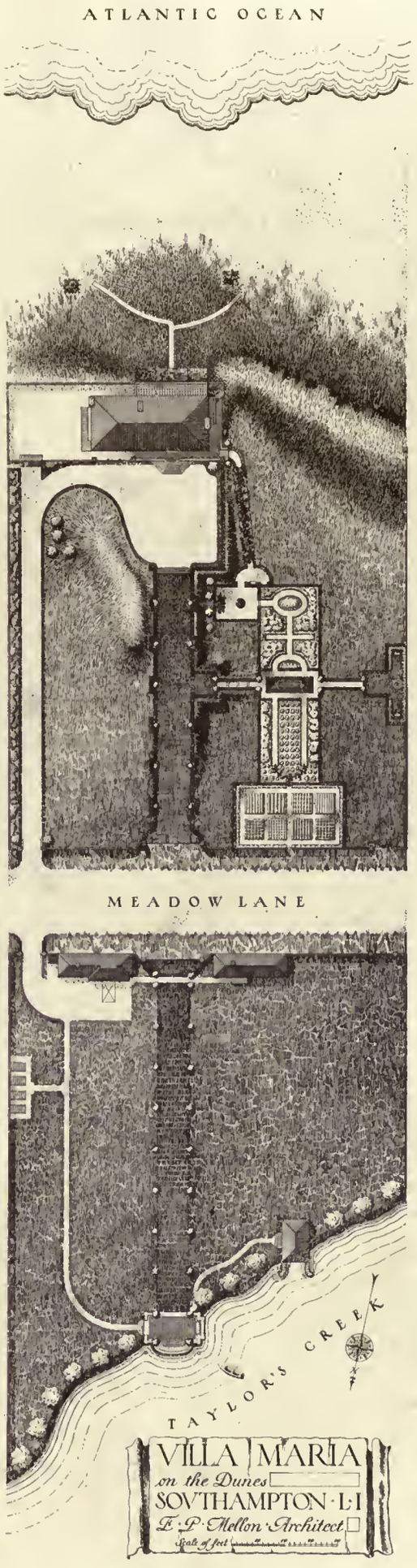
The property on which this building is erected is a narrow strip of rough and rugged sand-dunes lying between the waters of the Atlantic Ocean and those of Shinnecock Bay, the average width of this strip being about 850 feet. This particular piece of property, comprising about six acres, has a frontage on both of these waters of 300 feet. The highest dune, which is on the west of this property, rises to a height of 52 feet, sloping gradually to the east and to the south to the sand of the beach. To the north there is a gradual slope to Shinnecock Bay.

The erection of a house on this wild, narrow strip of sand-dunes was a pioneer undertaking, as never before had any of this strip of land been used for building purposes, and there was no means of access through the deep sand until after the building was started, when Meadow Lane, 50 feet wide, was built to and through the property.

All possible means were used while planning the house and during its erection to preserve the natural contours and beauty of the property as well as the natural growth, which is composed mostly of beach plumb, beach grass, and wild sweet pea.

In the selection of the site for the location of the house consideration was taken of the location of the high dune and its protection of the house from the westerly winds. From the sea side of the house the walls were designed to conform with the natural undulation of the dunes, with the result that the house on this side appears to be only two stories in height, the service court and entrance floor here being below the level of the top of the dune. From the north or entrance side the house shows the full three stories, the service court being on the level of the entrance story.

The driveway running from the main entrance, directly to the entrance of the service court, follows a natural depression in the dune, and swings around the dune, of about 12 feet in height, to the main entrance. Directly from the axis of this main entrance, running straight to the main



South Loggia.

road, there is a tapis-vert of 30 feet in width, bordered on either side by a high hedge. This being the only lawn on the property, it gives a strong and very pleasing contrast to the otherwise ruggedness of the property, and helps to heighten the Italian character of the house itself, the Italian character being considered the most suitable and harmonious for this wild natural setting. The unusually intense blue of the Southampton skies, which blueness is reflected in the ocean, has exactly the same character and feeling as the skies and sea of the Mediterranean. While the brilliant sunlight reflected by the sea and sand casts similar shadows to those found on the borders of the Bay of Naples and the Adriatic Sea, on which shadows Italian buildings are so dependent.

The color of the stucco used is about the same as the sand, being of a deep cream tone, varying from light to dark, and has already been delightfully streaked by the winter storms. Around the smaller windows the raised stucco frames have been stained a dark brown. The stone work around the main entrance also has the worn brown soft tone, while the plaster panel back of the bas-relief of the Virgin and Child is colored a sky-blue. The walls surrounding the property, as well as the garage and chauffeur's cottage, maintain the same color as the main house, and the three buildings are roofed in the most careful way possible, with old color-worn Italian tile, which is laid with an irregular ridge grouted by cement. All iron used on exterior and interior is hand-hammered. The building has taken upon itself the look of ages.

The construction is of terra-cotta block. The floors are of concrete, so that the house is virtually fireproof, and absolutely dry, even during the dampest and most foggy weather. The secret of this dryness is due to the fact that no portion of the house anywhere touches the sand-dunes, the architect having constructed a 10-foot area-way, surrounding the entire house, between the house and the dunes, over which area-way the loggia is constructed, which loggia overlooks the sea. The floor of this loggia is about 40 feet in elevation from the high-water mark, this being the same height as the main floor of the house, which gives every window on this floor and the floor above the full command of exceptionally wonderful views, every window having an outlook over one of the waters.

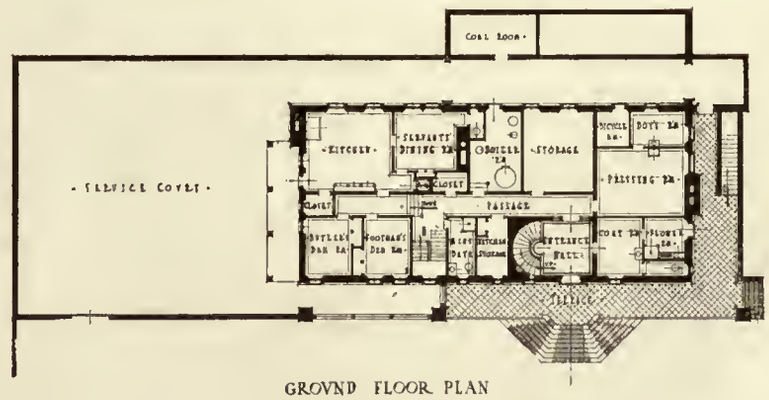
On the interior the same character is followed as on the exterior. The floors of the main rooms and hallways are of old worn black-and-white marble, retaining its beautiful antique patine. The walls are rough-plastered and vary in their delicate dull tinting in the same tones, colors, and variations as those of mother-of-pearl. The plaster is returned into the window-frames, and there is no trim used around the windows or doors, nor is there any wooden base. The window-sills throughout the house are of dark-red tile, the same tile being used on the floors of the bathrooms.

The stairway is semicircular, being completely of cement, rubbed to worn and uneven edges. This cement is painted white. The simple hand-wrought iron railing makes a complete contrast in color with the white of the stairway. The circular walls of the stair-well are penetrated here and there by simple niches.

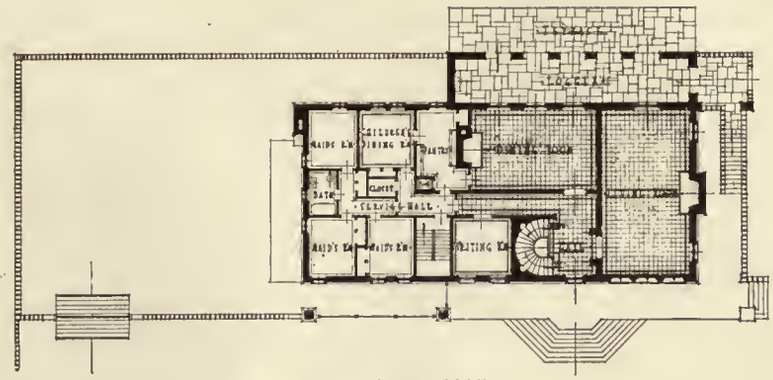
The stone mantels of the house are imported from Perugia, and the very rare and wonderful eighteenth-century frieze, which is placed on the wall of the dining-room, directly under the ceiling, was imported from the Palazzo Torlonia.

The planning of the different floors of this home was not done with the idea of monumental effect, but was planned wholly to suit the needs of the owner and for the sake of convenience.

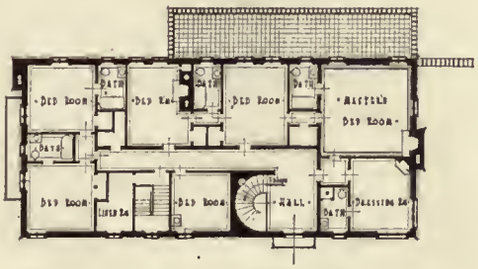
Interior of Loggia.



GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

VILLA MARIA
on the Dunes
SOUTHAMPTON · L·I·
E. P. Mellon: Architect
SCALE

GARAGE

CHAUFFEUR'S COTTAGE

To Build or Not to Build

By V. J. Clirehugh

TO build or not to build is getting to be a very much discussed question in these days of high building costs. We all hesitate in the hope that prices will be lower, but there is very little ground for believing that costs will ever return to those of pre-war days. It is principally because of the sudden rise in these prices that it is hard to realize that they have come to stay and will in all probability go higher.

During the period of hostilities the energies of the world were devoted to supplying the war needs of the nations, and to this end every class of material was drawn on and all available men and women devoted their energies to the one purpose of winning the war. Building for any purpose except for the necessities of war was prohibited, with the result that the entire country is short of housing facilities and many classes of buildings for manufacturing and other uses.

The world is still short of commodities of every character and the rebuilding of devastated Europe, the work we are doing to satisfy the present demand, the natural competition for the trade of the world, all put a great strain on our natural resources and our raw material market, creating a business condition which will never allow prices to reach their old level.

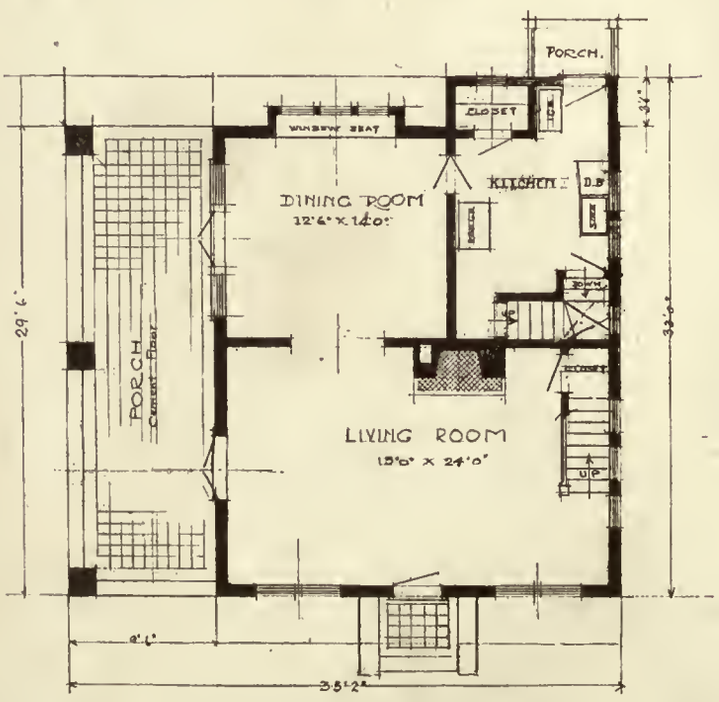
The high wages throughout the country are primarily the cause of high material costs, and while certain adjustments are bound to come, we cannot look for any substantial reductions. Never in the history of the world has the commodity price been lowered very much, particularly after being sustained for as long a period as the present rise has been. The rise in prices during the past five years has been greater than during the previous fifty years and conditions will never go back to where they were. Certain commodities are bound to go higher in cost as financial arrangements are made, so that credits can be extended to foreign countries.

In the building material market prices have advanced in the last four years from 30 per cent to 100 per cent. Structural steel which could be contracted for at $55 per ton in 1914 now costs $90 per ton; brick which was sold for $8 per 1,000 in 1914 is now bringing $18; framing lumber for which we paid $35 is now $65; cement which sold for from $1.80 to $2 now costs $3.25; excavation cost in the old days from 30 cents to $1 per yard, but now costs from $2 up.

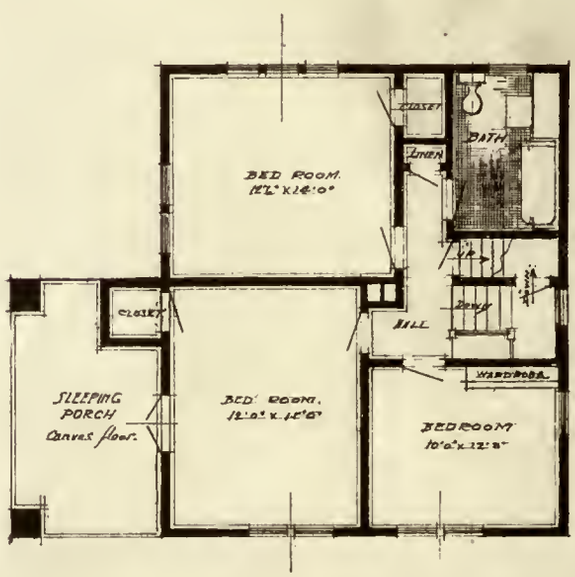
All of the materials which enter into the cost of a building are subject to transportation charges, and these have increased up to 100 per cent, according to locality, while the cheap labor used in the manufacture of these materials has increased from 50 per cent to 100 per cent. The great demand which was felt during the war for building labor caused a great many inefficient men to be employed and paid large wages for overtime work. This overtime work is now abolished and the efficiency of labor is getting better, due to regular hours and steady work.

At the present time there is a great scarcity of common labor, due partly to the fact that so many foreigners have returned to their native shores and largely to the fact that we have had no immigration for the past five years.

The contractor to-day finds it very hard to secure sufficient mechanics to handle his work, and as the necessary building goes on, using all the available labor, the workman's wages will not be reduced. The real-estate interests and other capital are doing all in their power to encourage building, and there is bound to be sufficient work



FIRST FLOOR PLAN



SECOND FLOOR PLAN

~ FRONT ELEVATION. ~

SOUTH ELEVATION.

to keep the prices of both labor and materials at their present price or increase them.

The demand for housing alone is tremendous, and will have to be met, and those who start their operations now will be able to finish or at least get well along before the big business gets well under way.

The house shown was built in 1914 at the costs shown, and will cost to-day 60 per cent more, but there is no material in this building that will not be in great demand, and no reason to believe it will be reduced at all, certainly not for many years.

The house is built with stone foundation walls, 8-inch hollow-tile upper walls, stuccoed, two to three coats plaster. Double floors throughout, with first quality comb-grain pine-finish floors. Chestnut trim in dining and living-room, and basswood throughout the balance of house. House is heated by steam and has one bath-room and one toilet in cellar. Shingle roof. Colored cement porch, marked off as tile and cement cellar floor.

The price includes a complete house, except for electric-light fixtures and decorations.

COMPARATIVE ESTIMATES OF COST

	COST IN 1914	COST OCT. 1, 1919
Excavation	$75.00	$125.00
Foundation walls	125.00	150.00
Cellar floor and chimney	150.00	200.00
Hollow-tile walls, 8-inch block, laid	200.00	300.00
Framing timber	500.00	875.00
Shingles	90.00	150.00
Carpenter labor	750.00	1,200.00
Trim, doors, and windows	700.00	1,300.00
Painting	300.00	450.00
Tinsmith	75.00	125.00
Plastering	300.00	600.00
Plumbing and heating	600.00	1,000.00
Electric light	100.00	150.00
	$3,965.00	$6,665.00
Builder's fee, 10 per cent	396.50	666.50
	$4,361.50	$7,331.50

Protection Against White Ants

SINCE white ants are difficult to eliminate from the woodwork of a building when once established, every precaution should be taken to prevent their gaining entrance. Where possible, foundations of buildings should be entirely of stone, brick, or concrete, including stone columns or pillars in the basement to support the floor above. Make the floors and walls in the basement or cellar of concrete, and lay the floors on a gravel base. Where stone or concrete foundations are impracticable, use timber impregnated with coal-tar creosote.

Lay basement window-sills and frames over concrete, and do not allow the woodwork to come in contact with the ground. Never sink untreated timber in the ground or in moist concrete. No wood should be in contact with the ground. Complete dryness of the foundation and basement walls is an important means of rendering buildings safe from attack; therefore, provide for air spaces between the ground and wooden flooring, and see that the basement floors are well-drained.

If white ants gain access to buildings, examine the foundation timbers and other woodwork in the basement, and determine the point of entrance. After removing the damaged wood, drench the ground with kerosene-oil, then replace damaged timber with rock, brick, concrete, or metal work, or if timber must be used, see that it is treated with coal-tar creosote. Since ants always require access to damp earth, shut off this source of moisture and the insects will not be able to extend their work further, and will perish.

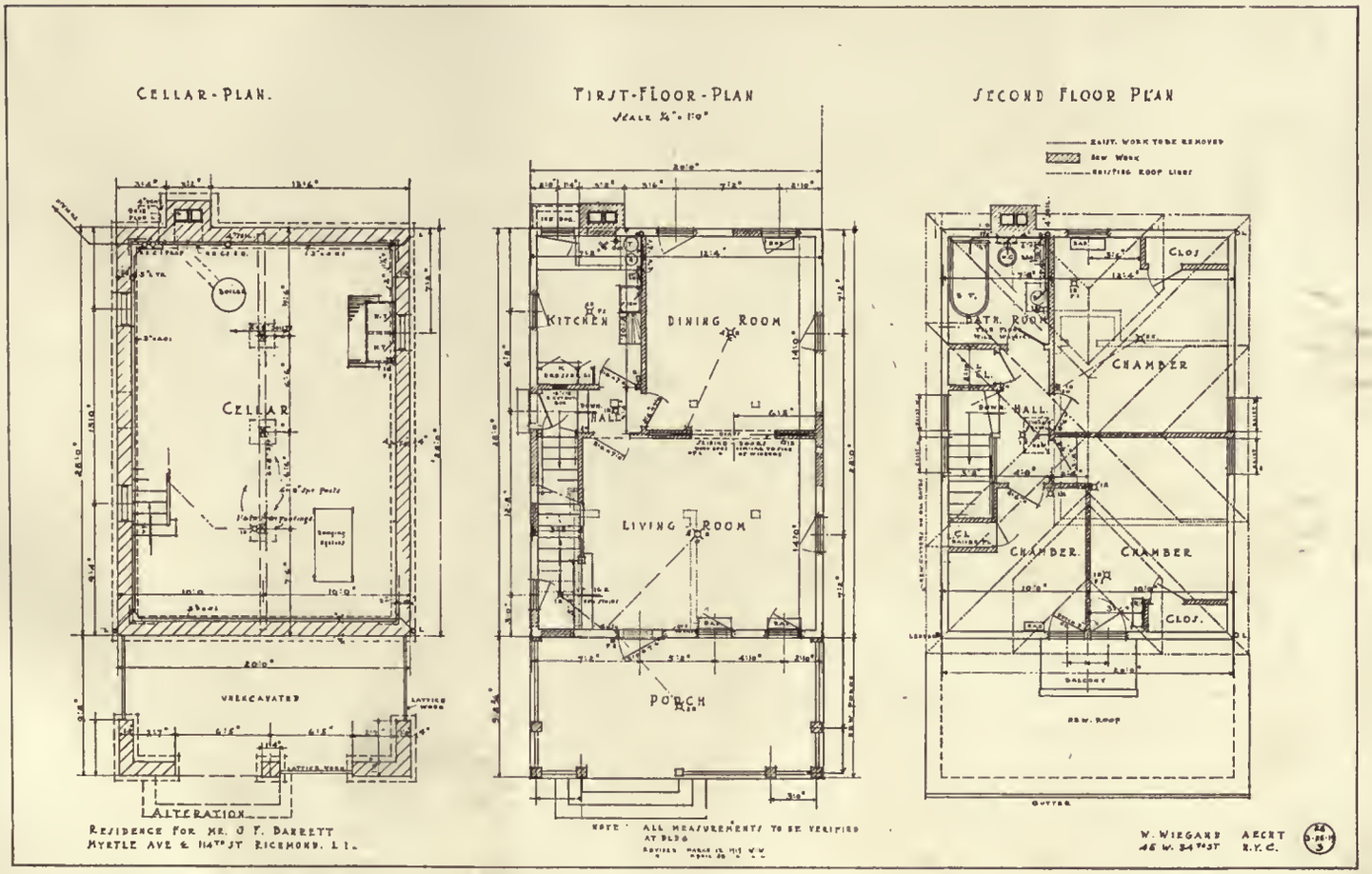
HOUSE, AFTER ALTERATION.

STABLE, BEFORE ALTERATION.

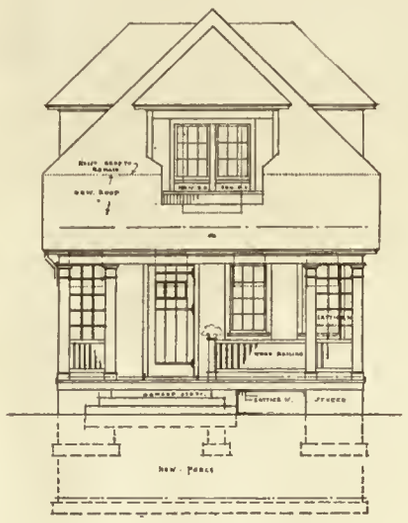
W. Wiegand, Architect.

FOR J. F. BARRETT, RICHMOND, L. I.

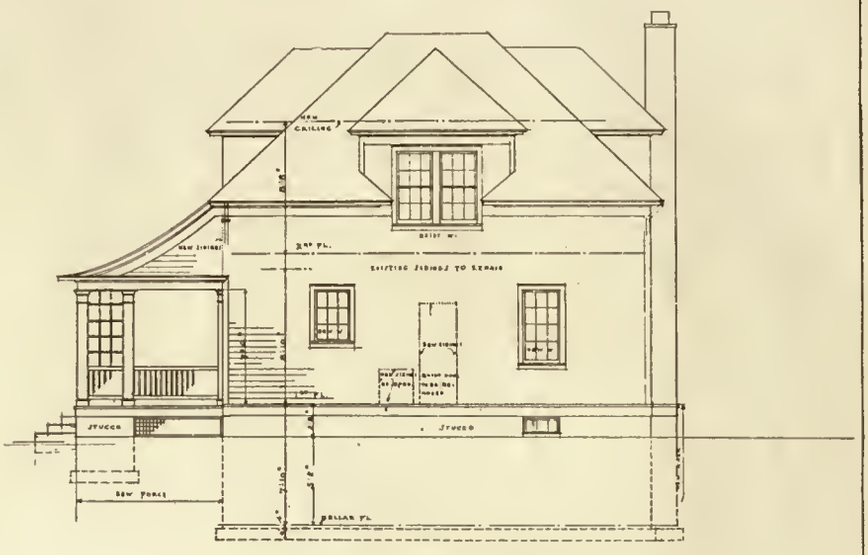
LIVING–ROOM.



ALTERATION FOR J. F. BARRETT, RICHMOND, L. I. W. Wiegand, Architect.



FRONT - ELEVATION



SIDE ELEVATION

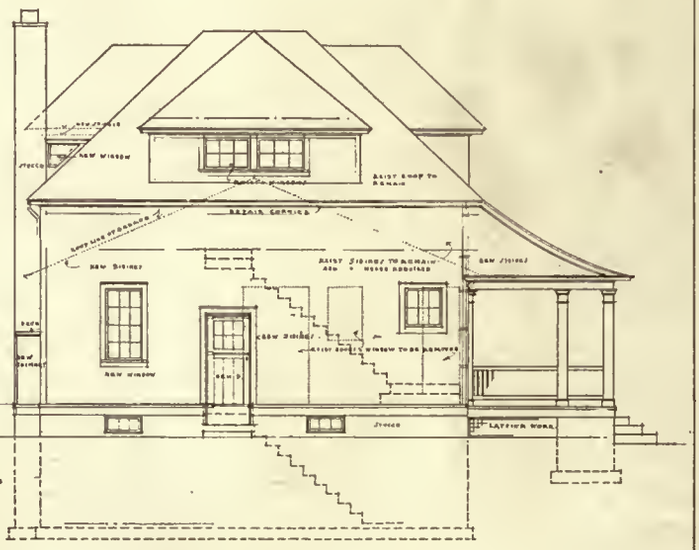
SCALE ¼" = 1'-0"

ALTERATION
RESIDENCE FOR MR. J. F. BARRETT
MYRTLE AVE & 114TH ST. RICHMOND-HILL, L.I.

NOTE. ALL MEASUREMENTS TO BE VERIFIED AT BLD'G.

W. WIEGAND ARCH'T.
45 WEST 34TH ST N.Y.C.

REAR - ELEVATION



SIDE ELEVATION

SCALE ¼" = 1'-0"

ALTERATION
RESIDENCE FOR MR. J. F. BARRETT
MYRTLE AVE & 114TH ST. RICHMOND L.I.

NOTE: ALL MEASUREMENTS TO BE VERIFIED AT BLD'G.

W. WIEGAND - ARCH'T
45 W 34TH ST N.Y.C

ALTERATION FOR J. F. BARRETT, RICHMOND, L. I. W. Wiegand, Architect.

The O. Henry Hotel, Greensboro, N. C.

W. L. Stoddart, Architect

WITH its spacious and inviting entrance on Bellemeade Street the principal features of The O. Henry ground floor are delightfully emphasized in the large and comfortably equipped lounging-room, lobby, and dining-room. The

lounging-room, circular in form, with its "homey" fireplace and cozy alcoves, located at the corner, is a distinct feature of The O. Henry. The lobby is one of the most attractive of southern hotels. It is an imposing room of pleasing proportions, vaulted ceilings, and caen stone wall treatment, and circassian walnut wainscoting. The mezzanine, located over the office, will provide a comfortable writing-room. With decorations all in perfect harmony, carried out in the Adam period, this lobby is a pleasing introduction to the spacious and hospitable O. Henry.

The dining-room adjoining the lobby is a continuation of the lobby treatment, spacious and airy in its furnishings, and with an outlook on Bellemeade Street with a separate entrance direct to the street; with a mezzanine balcony where the ladies may enjoy their afternoon tea, and from which a direct view through the lobby to the lounging-room is obtained, viewing all the delightful features of the ground floor. All these give a subtle charm to the O. Henry Hotel.

On the second floor perhaps one of the most interesting features is the room dedicated to O. Henry, decorated with photographs, and a complete O. Henry library and paintings depicting scenes dear to the heart of O. Henry readers.

The ballroom or assembly hall adjacent to the O. Henry room, with its large reception-room and grand staircase to the lobby, form the combined social rooms ideal for ball or banquet. A service pantry directly connected with the kitchen below affords prompt and efficient service.

Dedicated to the pleasure of its guests, the beauty of this ballroom will be enhanced by its decorated walls, vaulted ceilings, artistic hangings, and ivory-finished woodwork.

The principal consideration in the planning and construction of The O. Henry was to provide the highest type of modern hotel accommodations in every department.

While there are comfortable rooms for the man who wishes to sleep, bathe, and shave in comfort, but who must limit his expenditures, there are rooms and suites for the man who wants the comforts and furnishings of a home.

The O. Henry contains one hundred and seventy guest-rooms, each with a private bath, the others with built-in tub baths.

Every floor has running ice-water.

The building is provided with equipment for enforced ventilation, with purified air in all of the public rooms and throughout the kitchen and service pantry of the building.

Quiet is secured for all guests' bedrooms by double door and vestibule enclosures at all elevators.

Lighting Fixture in Dining-Room, Hotel Farragut, Knoxville, Tenn. Panels representing ancient and modern feasts, done in Chinese enamel, giving all the brilliant detail of the antique work.

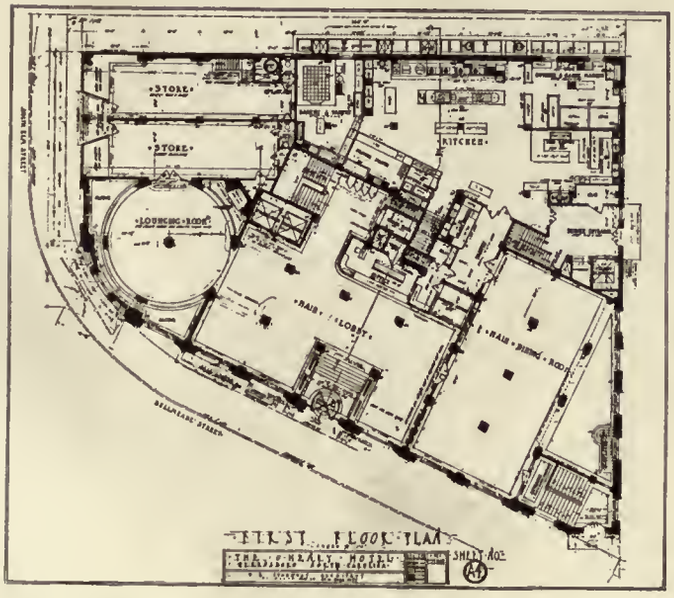
DINING–ROOM.

LOBBY.

THE O. HENRY HOTEL, GREENSBORO, N. C.

W. L. Stoddart, Architect.

BALLROOM.



THE O. HENRY HOTEL, GREENSBORO, N. C.

W. L. Stoddart, Architect.

There are automatic door signals which will enable maids to know when rooms are occupied, and there are indirect lighting fixtures, portable lights for writing-desks, and all other conveniences in the guests' bedrooms.

A very important factor in the arrangement of the rooms is that they are all outside rooms and no interior courts, which is a factor very few hotels can boast of.

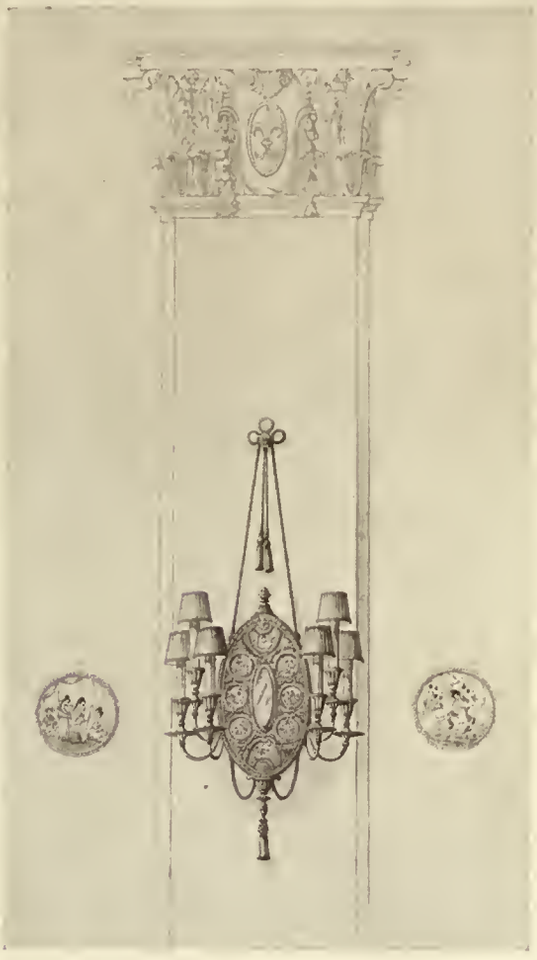
The sample rooms, which are located on the seventh floor of the building, have extra wide doors, large windows and extra lighting equipment.

In the basement under the dining-room is a room for a restaurant, with outside entrance connected with the dining-room entrance.

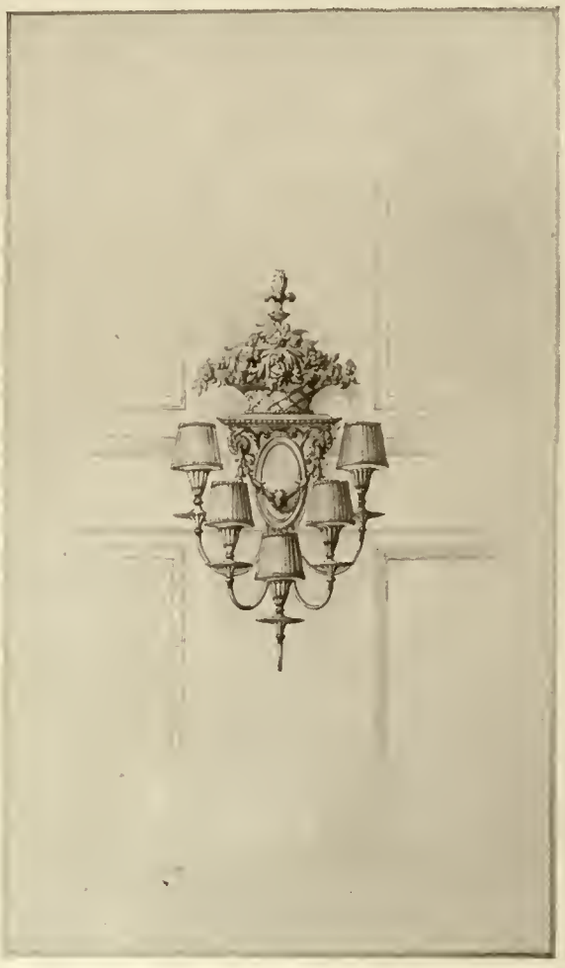
The spacious billiard-room and a modern tonsorial parlor, with outside entrance, comprise the basement features of The O. Henry.

The service portion of the building has been given particular and careful study in all details of arrangement and equipment, and is regarded by authoritative hotel operators to be the best that can be designed, complete in every detail for economical and rapid service in all departments.

Mr. Stoddart purposely kept the architectural details simple, especially in the interiors that were planned primarily with a view of affording effective backgrounds for rich hangings and especially designed lighting fixtures. It is Mr. Stoddart's theory that the modern hotel must be first of all convenient, well ventilated, comfortable, and that handsome furnishings in keeping with good taste are equally as essential. This idea has been carried out in two other hotels designed by Mr. Stoddart, the Farragut at Knoxville, Tenn., and the Penn Harris at Harrisburg, Pa.



Lighting Fixture, Ladies' Lounge, Hotel Farragut, Knoxville, Tenn. The medallions contains miniature insertions in Chinese enamel illustrating some of the many incidents that help to make the life of a woman's day.

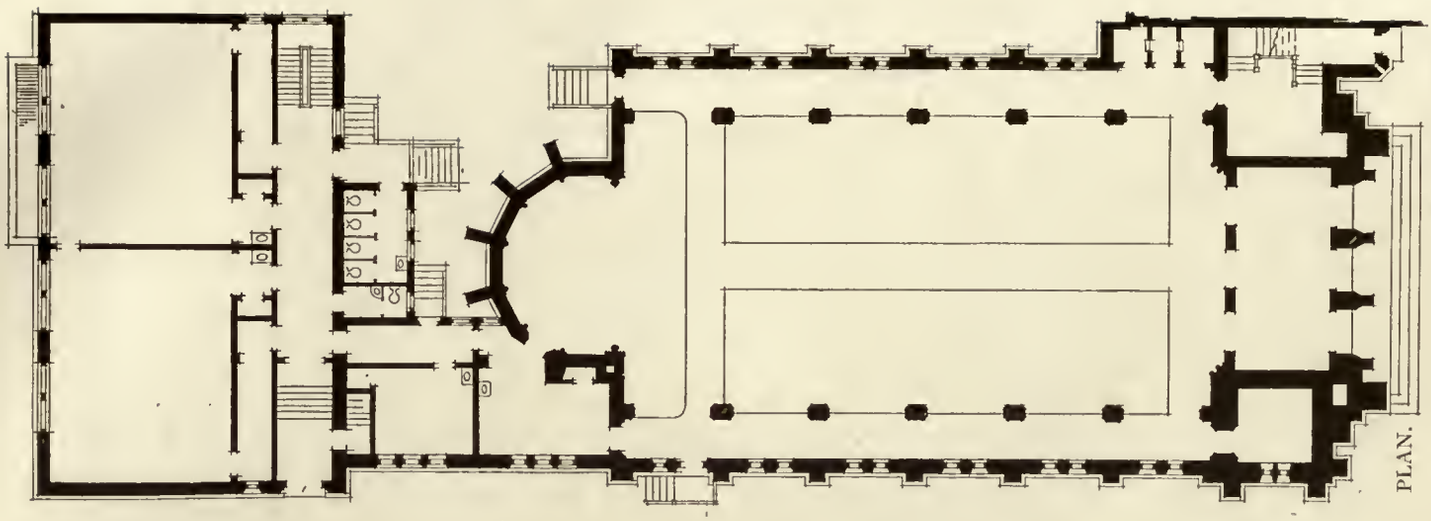


Lighting Fixture in Dining-Room, O. Henry Hotel, Greensboro, N. C. Basket of fruits and flowers produced in old gold and enamels.

As for the name "The O. Henry," there is a sort of predestined fitness. O. Henry saw life through the hotel. His stories abound in characters of the café. He knew the transient life as no other writing man of his day did. For that reason, there is a special fitness in naming this hotel after him.

At the dedication, Doctor Smith, one of the speakers, quoted a letter from Colonel Roosevelt, in which that great reformer confessed his debt to Porter. The Rooseveltian campaigns often found their sole inspiration in the stories of popular needs which O. Henry depicted in his stories about New York. The world, Doctor Smith said, does not know how this man touched its consciousness.

In dedicating the hotel to the growth and prosperity of Greensboro, and to the honor and praise of this man of sweet and kindly spirit, Doctor Smith bade, as a good-night, that people be mindful of their heritage.



PLAN. Paul Monaghan, Architect.

ST. LAWRENCE CHURCH, HARRISBURG, PA.

Modern Building Superintendence

By David B. Emerson

CHAPTER III

STRUCTURAL STEEL AND FLOOR ARCHES

As the structural steel works were located only a few miles from the building we were able to make occasional visits there for the purpose of inspecting the material while it was being fabricated. All beams and plates were inspected to see that the punching was done according to the drawings, and that all holes were clean-cut and without torn or ragged edges. All shop rivets were inspected. Before going to the shop a one-pound machinist's hammer was purchased at a near-by hardware shop. Tapping the rivet heads with this hammer told whether they were tight or not, and whether they completely filled the holes. A few loose rivets were found and ordered to be cut out and new rivets put in their places. All built up members were inspected to see that the abutting parts were painted before assembling. Strict orders were given that all steel should be thoroughly cleaned before painting, all rust and mill scale was ordered removed before applying the paint, where the rust had eaten into the surface of the steel it was ordered to be cleaned with wire brushes. The shop coat of paint was specified to be put on with hand brushes, and well brushed in. No long-handled brushes were to be used. The shop coat was called for in the specifications to be of red lead and linseed oil. Paint to be made up by mixing the pure red lead in a dry state, and the pure linseed oil in a revolving churn, using twenty-two pounds of lead to one gallon of oil, and mixing immediately before using. Not over one hundred and ten pounds of lead was allowed to be mixed at one time, and that had to be entirely used before another batch was allowed to be mixed. The first of the steel to arrive on the job was the beams for the grillage under the columns. The grillage beams were carefully spaced according to the details, and they were held together by means of long rods and gas-pipe separators; the grouting and filling with concrete was done as described in the previous chapter; the second tier of beams in the grillage was then set.

Particular care had to be taken to see that the position of the beams was exactly as they were figured on the plans, as the columns should set exactly in the centre of the grillage. The upper tier of beams was bolted together with rods and separators and filled between with concrete, as was the lower tier. Before setting, the shop coat of paint on the beams was touched up in all places where it had been marred in handling, and then the beams were given one coat of paint which had a bituminous base to resist the action of the alkalis in the cement, and also as a proof against any dampness which might come through the concrete. All bolts and separators were painted one coat. The columns were to set on solid slabs of rolled steel, which were to distribute the loads over the grillage; in this case they were thirty-two inches square and five inches thick, with both faces planed. The column bases sat upon these slabs and were bolted to them. We were very careful to see that every slab was well painted before setting. After the grillage had been set, the engineer was called to take the levels, and test all measurements to see that all was correct before starting the actual work of erection, for at this time errors can easily be corrected, which will entail great expense if not detected until after part of the steel has been erected. All being found to be correct, the erection of the steel was commenced, columns were set, and girders were put in place ready for rivetting. All work was drawn up close by means of erection bolts, so that the metal from the rivets would not flow between the plates.

Holes were brought in line and matched by the use of drift pins, but particular care was taken to see that the metal was not injured in the driving of the pins. All field riveting was done by means of a pneumatic riveter. Rivets were inspected to see that they were long enough to fill the holes and to form a perfect head. All column splice plates were rivetted, and all girders were connected to columns by means of rivets. Connections of floor beams to girders were made by bolting. Columns were plumbed as each section was set. When the third tier of beams had been set the contractor was ordered to plank over the entire first tier of beams, and each alternate tier was planked over as the work progressed. This was done as a protection to the workmen who were working underneath, as a hot rivet or a bolt falling any distance from above is liable to cause serious and possibly fatal injuries to the men below. As the steel was set the shop coat of paint was touched up where it had been marred in handling, and all rivet heads were painted one coat to match the shop coat of the steel. All bolts were dipped in paint before putting them in place. The steel was given a field coat of genuine graphite paint.

All painting was specified to be done with hand brushes and carefully brushed in. As erectors generally try to slight this part of the work, we were obliged to follow them up pretty closely and insist that the work be done according to specifications, and when they learned that we really meant what we said, the work went along smoothly and well. The bottom flanges of all beams and girders, and the flanges of all free standing columns, were fitted with metal caging to hold the haunching and the column casing. The caging was made of galvanized steel wire, and came to the job collapsed, and was opened out accordionwise and adjusted to the flanges of beams and columns. The columns were provided with special wet stiffeners to go over the wet openings, making a complete cage around the column. As the erection of the steel progressed the ornamental iron contractor commenced setting the strings and risers for the staircase, and iron work for the elevator enclosures, and the plumber followed close on the heels of the erectors, installing the soil and waste lines and the leaders, so that there would be no delays in the work.

The strings and risers of the main stairs were of cast-iron, moulded and ornamented. As the castings arrived at the building they were looked over to see that they were true to line, with no breaks nor shoulders, that they had no blow-holes, nor sand-holes, and that all gates and fins had been thoroughly ground off. All castings were wire-brushed to remove all sand. All stair work was specified to be put together with countersunk screws, concealed wherever pos-

INTERIOR, LOOKING TOWARD SANCTUARY.

INTERIOR, LOOKING TOWARD GALLERY.

Paul Monaghan, Architect.

ST. LAWRENCE CHURCH, HARRISBURG, PA.

sible. The stair strings were securely bolted to the steel frame, and the risers were bolted to the strings. The stairs were provided with under treads of number ten gauge sheet iron, screwed to the risers; this was done in case of fire calcining the marble treads, there would be no danger of a person who stepped on the tread breaking through and being injured. When a few tiers of steel had been set, the forms were put in place, and the reinforcing for the floor slabs was installed. The forms were constructed as described in the preceding chapter, and hung from the floor beams and girders. The slab reinforcing was in the form of a continuous steel wire mesh, which was laid the full length of the building and securely fastened to the beams at the walls, and run over the upper flanges of the floor beams.

The edges of the fabric were ordered to be lapped and well wired together, which made a complete sheet of reinforcing over the entire floor. As soon as reinforcing was in place the pouring of the floor slabs was commenced. Concrete was as described in the previous chapter. It was sent up to each floor by means of a specially constructed hoist, equipped with a dumping bucket, and spread on the forms. All concrete was placed the full depth at one operation. It was found necessary in some cases to stop placing concrete before the entire slab was completed, in which case we instructed the foreman to make the joints in the centre of the panels by means of vertical bulkheads. These bulkheads were provided with triangular strips which formed a two-inch by two-inch key in the centre of the slab. The strip set on top of the steel, and the space between was caulked with a one to two cement mortar. Bulkheads were not allowed to be removed until the concrete had set hard. The offices throughout the building were to have cement-finished floors. These were to be laid as an integral part of the floor slab. The contractor was instructed to screed the wet concrete up with a straight edge, bringing it level with the grade of the finished floor. While the concrete was still in a liquid state, the cement finishers started floating this down with a one to one and a half mixture of Portland cement and sand, applied dry and worked into the top of the slab. The finishers then hand floated into this top a one to one mixture of Portland cement, and a metallic hardener, working out all the air bubbles and bringing the water up to the surface. The surface was finished by giving it a hard fanning or burnishing, polishing it thoroughly and completely eliminating all trowel marks. Strict orders were given that laborers or mechanics should not walk over the fresh concrete, and any who persisted in doing it were ordered to be discharged. The finished floors were covered with one inch of sawdust within twenty-four hours after their completion, and this sawdust was wet down twenty-four hours afterward, and the floors were kept covered, until the completion of the building. On returning to the building after an absence of a day at some of the shops inspecting material, we found that the foreman was piling quantities of building material on the floor slabs, which had just about set and that were still quite fresh. This was ordered stopped and the materials removed as rapidly as possible. This practice cannot be too heartily condemned, as the wet concrete is always considerably heavier than when dried out, and the adding of a superimposed load considerably greater than the assumed live load, and very often concentrated on one or two panels, has in some cases caused a collapse of the entire structure.

Before the floor slabs were poured and after the reinforcing had been placed, the electrician was notified to install all conduit and outlet boxes which were to be buried in the concrete. The installation of conduit, etc., will be treated fully in a later chapter. The steel frame being erected and the pouring of the floor slabs well advanced, the laying up of the brick work and the setting of the cut stone and the terra-cotta was now started, and will be the subject of the coming chapter.

(*To be continued.*)

Practicality Must Supplement Idealism

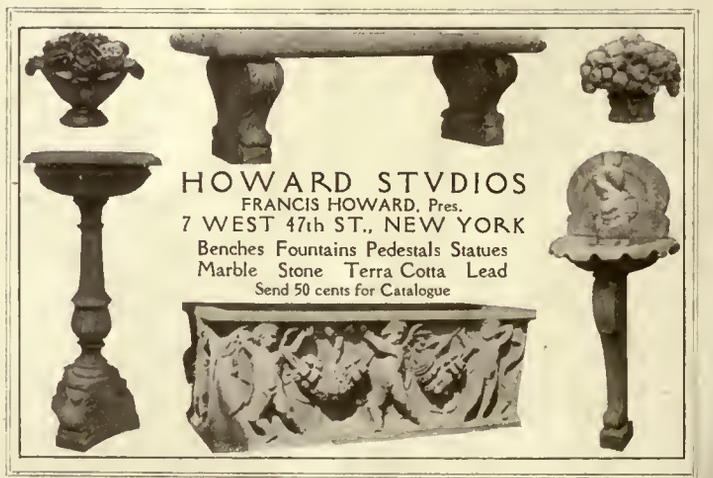
"There is no dearth of political idealism in the United States, nor lack of an able spokesman for our national morality. Only posterity, with the advantage of perspective, can properly appraise them; certainly, I shall not attempt to do so. But there has never been an occasion when practical, constructive, business leadership was at a higher premium in this country than at the present.

"If we are to keep pace with the accelerated movement of the new period, we cannot permit lilliputian ideas to bind our industrial Gulliver. And that is what those who seek to return to pre-war conditions and restraints are advocating.

"We may expound our national idealism to the world with all the zeal of modern crusaders, but unless we supplement it with practical efforts, based upon the fundamental principle of helping other peoples to help themselves, our idealism will utterly fail of its purpose. And I contend that the best way to make such practical humanitarianism possible is to free business of its present and pre-war obstacles, for, if the war has taught us anything about economics, we have awakened to a realization that all nations are interdependent, that the prosperity of each is contingent upon the prosperity of the others, that productivity does not enrich one people or class alone but all humanity as well. If this country, therefore, is permitted to utilize its industrial resources, strength, and individual initiative in a measure commensurate with the demands of the hour, we will put at the disposal of the world one of the most efficacious of stabilizing forces."

Stop Knocking

IF we as a profession do not have confidence in ourselves, how can we expect confidence in others?


HOWARD STVDIOS
FRANCIS HOWARD, Pres.
7 WEST 47th ST., NEW YORK
Benches Fountains Pedestals Statues
Marble Stone Terra Cotta Lead
Send 50 cents for Catalogue

CATHEDRAL OF SOISSONS (AISNE), MAY 12, 1919.

ARCHITECTURE
THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XL DECEMBER, 1919 NO. 6

What the Huns Have Done for French Art

By A. Kingsley Porter

ILLUSTRATIONS FROM PHOTOGRAPHS BY L. W. PORTER

DURING the months of armistice the smoke has cleared from the battle-fields, so that it is now possible to see, quite accurately, the France that the Germans have left. At least as far as regards art, but few details are still blurred. It is true that portable objects mourned as lost —for example, the superb Madonna of Urcel— are even yet occasionally coming to light. There is room for hope that similarly other statues and paintings now counted as missing may, after all, prove to be safe. But uncertainty is possible in regard to only a very few movable works. What the Germans have destroyed is only too evident. The loss brings increasing heartache as the excitement of the first news yields to sad custom. In addition to the ruins themselves a new source of information is now beginning to be available in the form of German publications. These documents are of extraordinary interest, and will surely be among the important exhibits for historians of the war.

Azincourt (Oise) Virgin of the sixteenth century in wood. The statue excavated by the French Government has now been sent back uninjured to the ruined church.

The most striking fact that results from the evidence is the danger of making broad statements. The truth is that the Germans acted very differently at different times and in different places. They displayed no such consistent order nor system as they have been credited with in the imagination of their enemies. They generally destroyed and pillaged and stole. Occasionally they protected works of art with remarkable perspicacity. They were at times capable of acts of chivalry. Even where their intentions were apparently of the best, they often made the stupidest of mistakes. Like other human beings acting under the stress of excitement, they were apt to throw the mirrors out of the window and carry the pillows down-stairs. And what in one place they saved with care, they elsewhere wantonly destroyed.

It is unnecessary to recall that portions of the French soil occupied by the Germans were among the districts of Europe most rich in art. Not only the great cathedrals and abbeys, but even the country churches of the Ile-de-France are commonly masterpieces of Romanesque or Gothic design. Their beauty and historical importance have long been recognized. They have, moreover, also another no less interesting aspect, one which has only recently come to be appreciated, but which must be especially borne in mind in connection with the German depredations. These rural churches of the Ile-de-France were also museums. They contained collections of capital significance. For the objects of art were (except those added during the last half century) genuine; and by genuine I mean not only that they were free from modern falsification but that they fulfilled the primary requisite of a real work of art in that they had been created with joy and were capable of communicating joy. The objects were, besides, infinitely more valuable because indigenous. Thus the student was never in doubt as to their provenance; and, much more important, they gained the immense advantage of always remaining in their native surroundings. A true work of art inevitably loses when it is torn from the spot in which it was made and for which it was made. And these were singularly harmonious with the lovely architecture in which they were placed.

Nor does the significance of the collections in French country churches end here. Art that is art springs spontaneously from the roots of the people. It is something which is created by an irresistible and instinctive impulse. And it is that sacred yearning which permeates every stone and every accessory of the French rural church. We cannot have the great art unless we have common art. The country churches prove that in France until the nineteenth century—even in those periods of the *ancien régime* we are wont to think most aristocratic—art was not exclusive, but belonged to the people, formed part of the national heritage. The royal cabinetmakers of Louis XV at Versailles hardly produced more exquisitely dainty woodwork than the altar of the simple little country church at Serches. By this token of being in the blood of the people, rather perhaps than by the patronage of kings and nobles, the French art of the eighteenth and even of the seventeenth centuries was great.

Until the coming of the Germans, therefore, nearly every village of the Ile-de-France contained its church, and in this church the centuries that have passed had laid, each

St.-Quentin (Aisne), April 23, 1919. Showing piers drilled for mine by Germans. To the right the frame of a painting which has been cut out and carried away.

at the foot of the altar, its moment of vision. The exalted thoughts of the past were there gathered together, a history of the sublimity of man. There is no form of art, no expression of human aspiration toward beauty which has not contributed to that synthesis which is the rural church of France —a synthesis smaller in scale, but not always inferior in quality to that of the great cathedrals. The collections are extraordinarily rich whether from the point of view of quality, variety, or quantity. You will find baptismal fonts, Romanesque, Gothic, Flamboyant, and Renaissance; altars and reredoses of the sixteenth, seventeenth, and eighteenth centuries, with statues and reliefs in polychrome, stone or wood or marble; jubés crowded with carvings and sculptures; Louis XIV lecturns with heraldic eagles spreading their gorgeous wings of brightly colored wood; other lecturns of wrought iron of rococo design; pulpits of the seventeenth century incredibly carved and bearing the signature of the maker, with the date in an out-of-the-way corner, and which, perhaps for long centuries, no one but you has noticed; organ-cases of similar workmanship in the caryatids of which you recognize the hand of the same artist; doors of carved wood, superb in design, with the original hardware of the fourteenth century; "poûtres-de-gloire," beams running across the church between the choir and the nave, richly carved with statues and reliefs, superbly colored; rood-screens; holy-water basins of curious and exquisite workmanship; holy-water pails of bronze of the sixteenth century; candlesticks of all periods and styles, some even Gothic; glass chandeliers of the eighteenth century, jingling and dangling; processional crosses, enamelled with Gothic enamels; crucifixes of wood, of bronze, and of ivory; vestments of ancient stuffs, chasubles, copes, albs, altar-cloths; rare laces; standards of the brotherhoods with sculptured images; paintings of all periods and schools, often of amazing merit; "bancs d'œuvre," or pews for the vestrymen with elaborately carved woodwork; panelling of the choir, and even of the nave, in wood sometimes with delicious rococo painted decoration; altars and confessionals; sculptures in relief often colored on doorways, capitals, and walls; statues of stone, of wood, of plaster of all epochs and styles, painted and unpainted, but never (except those made in recent times) without artistic interest; enamelled reliquaries; Limoges plaques; "bouquets" or prizes won by the societies of archers, and traditionally offered time out of mind to the local church (these "bouquets" are generally images of St. Sebastian in an unbelievable edicule of gingerbread architecture); models of ships offered by mariners to St. Nicolas; superb funeral-stones with the engraved or sculptured images of the dead—the church is sometimes paved with these magnificent documents; carved wooden roofs with dragons and peering heads; stained-glass windows, Gothic or Renaissance; frescoes of all periods from the twelfth century; Louis XV consoles; superb armchairs of the late eighteenth century; tapestries, Gothic, Beauvais, Aubusson, and Gobelin—all this and infinitely more had been lavished on the symphony of the French rural church by a past incredibly prodigal of production.

Moreover, the French church is as full of life as the modern museum is full of death. In the Louvre, for example, I am never entirely sure whether I am more exalted by the quality of the collections or depressed by their quantity. Those unending rooms of classified objects "inert and labelled" have a curious power to destroy the mood of reflection and poetry which it is the sole purpose of art to create. In such circumstances I find something of the same difficulty in enjoying, let us say, the Baldovinetti madonna, as I should in reading Plato on the Avenue de l'Opéra. A modern museum has a curious ability to destroy the thrill of even the greatest masterpiece. Our mind may tell us we are in the presence of a superb work of art, but our instinct, which only matters, is frequently, if not numbed, at least blunted. I even doubt whether the modern, more thoughtfully arranged museums are in this respect vitally superior to those of the last century. Some feeling for harmonious grouping and composition of the whole has assuredly been introduced. But by that very fact the old attic or junk-shop quality, which was not without its own charm, has been lost. There used to be a genuine pleasure in mentally sorting out the wheat from the chaff in the *salon carré* of the Louvre or the *tribuna* of the Uffizi. In the

Cathedral of Noyon, June 1, 1919. The temporary roof is seen in place.

St.-Quentin, April 23, 1919. German prisoners at work clearing the ruins.

junk-shop museum unknown masterworks, one felt, might at any time turn up in an unexpected corner, and the charmingly naïve attributions were a continual mental challenge. Modern scholarship has much curtailed the chances for exploration in the museum of to-day. Yet, save in a few exceptional cases, there still remain the self-conscious air, the general morgue-like aspect, the quantity with its attendant sense of fatigue. Scientific classification results in placing together hundreds of objects as much alike as possible, pictures, let us say, not only of the same school, but by the same artist. Any one, taken by itself, might give infinite pleasure; but *en bloc* the series is disheartening.

The modern museum also has a curious way of making works of art inaccessible. Every one knows that all museums are always closed the particular day one wishes to visit them. Every one knows how the guards always shoo one away to close up just at that precious, fruitful moment that will never return. Every one knows that the particular picture one wants to see has always just been removed for some mysterious reason. Every one knows that all galleries are always being rehung and that they will remain closed for an indefinite period. Every one knows that the serious student who wants to sketch, or, even worse, to photograph, is regarded as little better than a criminal, and that the necessary permissions and authorizations are as complicated and difficult as those surrounding passports in time of war. Every one knows that nothing arouses to so excited a pitch the suspicions and anger of the guards (always, one feels, silently hostile) as to be caught taking a note. Indeed, in moments of bitterness, I have wondered whether the principal function of museums was not to render works of art as little enjoyable and as little profitable as possible.

Now the French museums of the past—I mean the churches—were created by a race of keener artistic perceptions. These museums, taken together, contain a formidable quantity of objects, far more, I should suppose, than the Louvre. But instead of concentrating all these works in one city to complicate with artistic indigestion the delirium of a fever-tossed population, a wiser age left them where they belonged. No village was so small nor so removed that it did not possess its collection of art. And in each church there were just enough objects and arranged in the best way. They all composed to form one whole. Everything was in place. There was no crowding. There was none of the monotony resulting from a long series of similar objects.

The Italian churches, like the French, are museums also, and museums on the whole of equal, though perhaps not of greater, wealth; but the arrangement is carried out in a different spirit. The Italians love to secrete their masterpieces in dark and improbable places, where one has every chance of walking by without perceiving they exist. Chapels are kept locked and altar-pieces veiled. This method also has its charm. The effort of the search makes the finding seem sweeter. The English, too, are fond of keeping their cathedrals locked up, and allowing the public to enter only on payment of a substantial fee and in personally conducted parties. But in the French church nothing is hidden away. The door stands open all day long, year in, year out. One can go when one will, how one will. No obtrusive guardians intervene to spoil one's enjoyment. One can study and photograph and take notes and sketch to one's heart's content. And the same spirit presides over the arrangement of the objects in the church. They are neither hidden nor unduly obtruded. They are simply there, in their place, an integral part of their environment, speaking without ostentation and without affected modesty to whoever cares to listen.

When, therefore, the Germans invaded France they found themselves in the presence of an æsthetic delight singularly rare and subtle. The war was fought out, not only among great cathedrals of which the striking beauty was known to all the world, but among country churches of great architectural merit, filled with works of art of which the high worth was none the less real because known only to a few.

The attitude of the invaders toward this wealth of art was, as has been said, singularly vacillating. A few concrete instances will give an idea of their general behavior.

The basilica at St.-Quentin was certainly one of the great Gothic monuments of France. It was, it is true,

St.-Quentin, April 23, 1919. Boche prisoners in foreground.

situated a little out of the charmed region in which the purest mediæval architecture is found. The art stops abruptly at Laon, and its boundaries correspond closely with those of the Ile-de-France. St.-Quentin is to the north and east of this magic district. Yet the church was of exceeding interest, not only as an example of an important period that has left us but very few monuments, but on its own intrinsic merits. The double transepts (a feature almost unique in France), the superb unverticality of the nave, the wealth of space composition, the stained-glass windows, the extraordinary number of works of art contained in the building, raised it to a level attained by few cathedrals. Grim, powerful, almost forbidding in its main lines, its stern masses, on nearer approach, dissolved into dainty Rayonnant detail.

St.-Quentin, as every one knows, was taken by the Boches in 1914 and held until 1918. The Germans had, therefore, every opportunity to demonstrate here their enthusiasm for art.

They began by a notable achievement. Most of the stained-glass windows were dismounted and removed to Maubeuge before they had been irreparably damaged. In view of the battles of which St.-Quentin later became the centre, there is no doubt these superb monuments were thus saved from certain destruction.

The next step was to pillage the church thoroughly. Nearly everything movable which the French had not succeeded in getting out of harm's way was stolen. These objects, so precious in their setting, so much less valuable elsewhere (however intrinsically lovely), were torn from where they belonged and fell to the tender mercies of any one who picked them up. How many were destroyed during transportation by improper packing? Who took them? Where did they go? . . . It is extraordinary that not only objects which might seem to be movable but even those which formed part of the structure of the building disappeared. Thus a Roman inscription, built into a pillar, was torn out and carried off by some one whose love of antiquities led him to risk thus pulling the entire church in ruin about his ears. The thirteenth-century choir-grilles were similarly wrenched from their sockets and shipped to Germany, an achievement showing remarkable initiative on the part of some individual, when one considers the difficulty of transporting these weighty and unwieldy objects in time of war. Even the tombstone of La Tour was stolen. Yet the most interesting antiquity of the church, the rose-window sketched on stone, possibly by Villard de Honnecourt, and certainly in the thirteenth century, remained untouched.

The next act of these lovers of art was to prepare the complete destruction of the church. Forty-eight holes, each about eight inches broad by about eighteen inches high, were drilled in the piers. Had the obvious intention been carried out, the church would have been reduced to a heap of débris. But the mines were never exploded. Why? The church had already been ruined by the bombardment. Did an economically minded commander decide the destruction was sufficient, and conclude to save his munitions?

The chance, whatever it was, has preserved what is, perhaps, the most superb of all the ruins, more dramatic possibly even than Reims. The structure has been severely damaged. The vault of the nave is completely destroyed; but another vault, even loftier, that of the June sky, has taken its place. Nowhere does one feel so overwhelmed with the dizzy height, the daring of Gothic work. The beauty of true art outlives all but annihilation. The grandeur of St.-Quentin is in stronger contrast to the dreary dulness by which it is surrounded now than before.

Repositories for works of art evacuated by the German Government were established not only at Maubeuge but also at Valenciennes, Brussels, Wiesbaden, and elsewhere. These collections have been recovered in their entirety, and the objects were generally undamaged. It is infinitely to be regretted that comparatively so little was thus rescued from pillage. The glass of St.-Quentin was saved. But the glass of Parfondru, a church which was never damaged by bombardment, was dismounted with equal care, packed up and carried off. Since, at least to the extent of my knowledge, it has never been recovered; it is probable that it was appropriated by some German officer with a taste for ancient windows.

Laon. German Cemetery. Monument erected by Germans.

Firestone Park, Akron, Ohio

By John F. Suppes, Architect

A group of recently completed houses in Firestone Park.

FIRESTONE PARK is a new community centre in the south end of Akron, within the city limits, about a mile away from the main plant of The Firestone Tire & Rubber Co. This development was started three years ago, and since that time there have been about six hundred houses erected in the park. At the present time the company is erecting one hundred and twenty-five houses, of eight different plans and forty-one different exteriors, some of which are nearing completion, and to show how houses are developing, we publish a typical group.

It is expected to erect from one hundred to two hundred houses every year in this park by a subsidiary company of The Firestone Tire & Rubber Co., called The Coventry Land & Improvement Co., which company erects and sells these houses to any one who will pay $500 cash, and the balance at nine-tenths of one per cent as monthly payments, covering first and second mortgages. The public at large are also permitted to erect houses of individual design subject to approval by The Coventry Land & Improvement Co., if the money for erecting building is loaned from this company. The minimum cost of houses allowable to be erected in the park is $3,500, which does not permit of any kind of a home at this time. These last one hundred and twenty-five houses are selling from $7,000 to $9,500, which high prices are brought about by the excessive cost of building operation, and again land value in Akron is quite inflated. The plots run from forty-foot to as high as one-hundred-and-twenty-foot frontage, making some of these places very desirable homes.

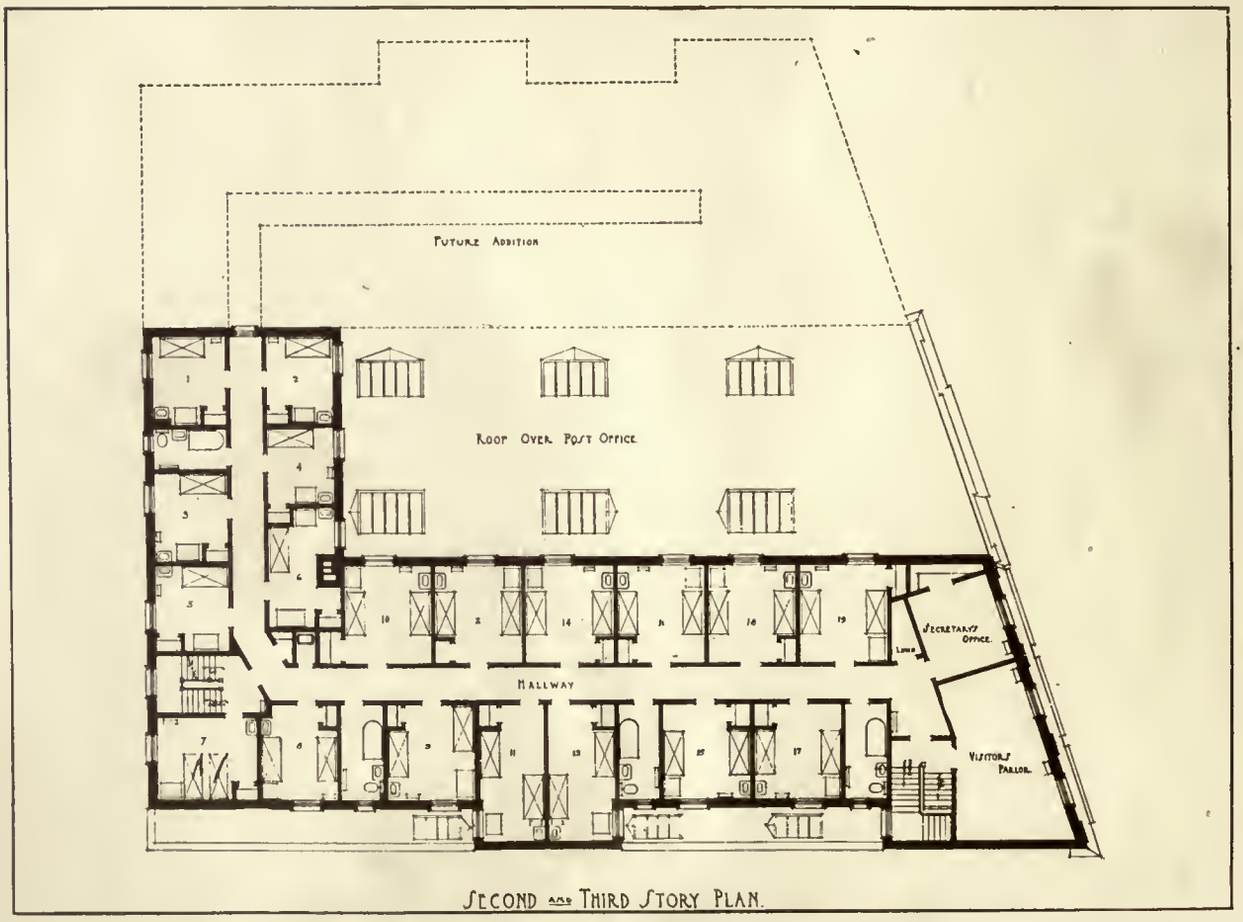
There is, of course, the business section, where store buildings are being erected, and the sketch shows the type of stores with apartments over that are now being planned for erection in the early spring. They are also preparing plans for a community hall and motion-picture building, which will be in the business section of the park.

The post-office branch, dormitory, and cafeteria of a branch of the local Y. W. C. A. was completed a little over a year ago, and both have proven a wonderful success in this section. There is a great demand for the erection of more dormitory quarters on the other side of the post-office unit, as is shown on the plans, and it is hoped that in the very near future this wing will be built.

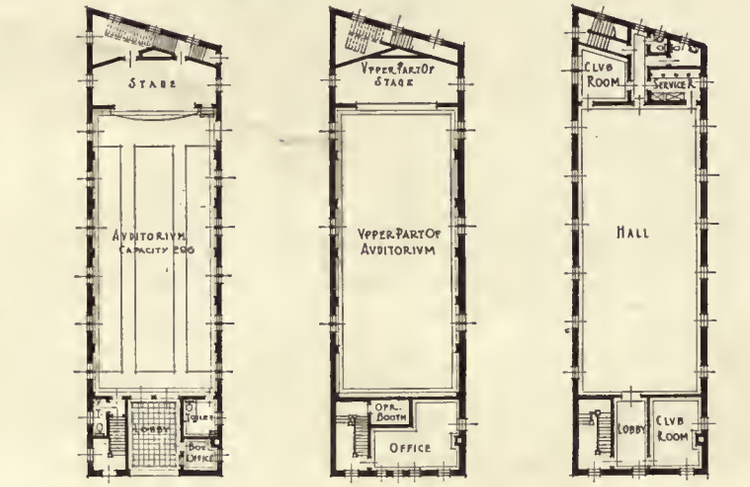
The park has a school, completed last year, which is of the very latest type. There are also temporary church buildings, and in a short time there will be two, with a possible third, good-sized church buildings erected in the park.

Firestone Park was planned by Mr. Alling S. De Forest, landscape-architect. The entire scheme is credited to Mr. H. S. Firestone. So far there has been about $5,000,000 spent in the development of the building of houses, street-paving, sidewalks, sewers, street-lighting, water, etc.

Y. W. C. A. AND U. S. POST-OFFICE BUILDING.



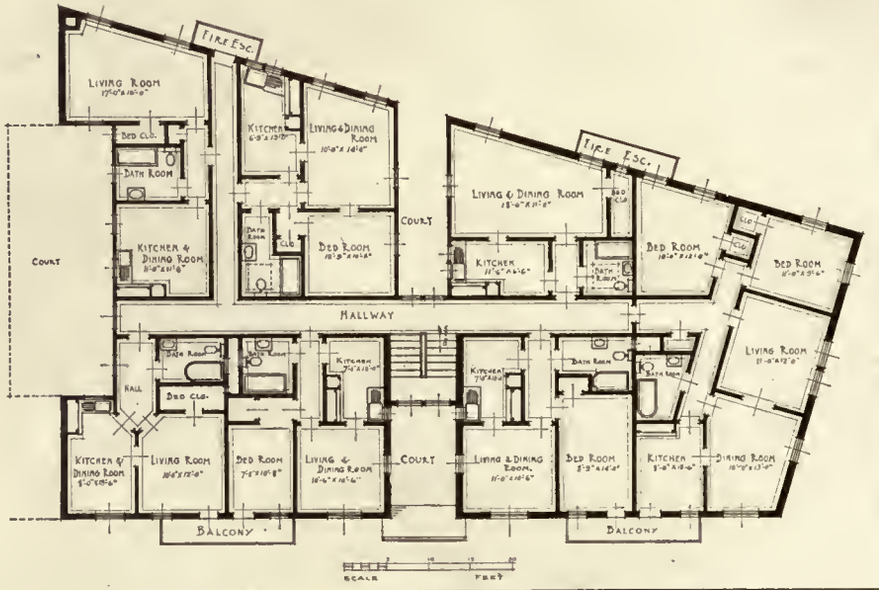
BUILDINGS IN FIRESTONE PARK, AKRON, O. John F. Suppes, Architect.



MOTION PICTURE AND COMMUNITY HALL BUILDING

FIRESTONE PARK AKRON, OHIO

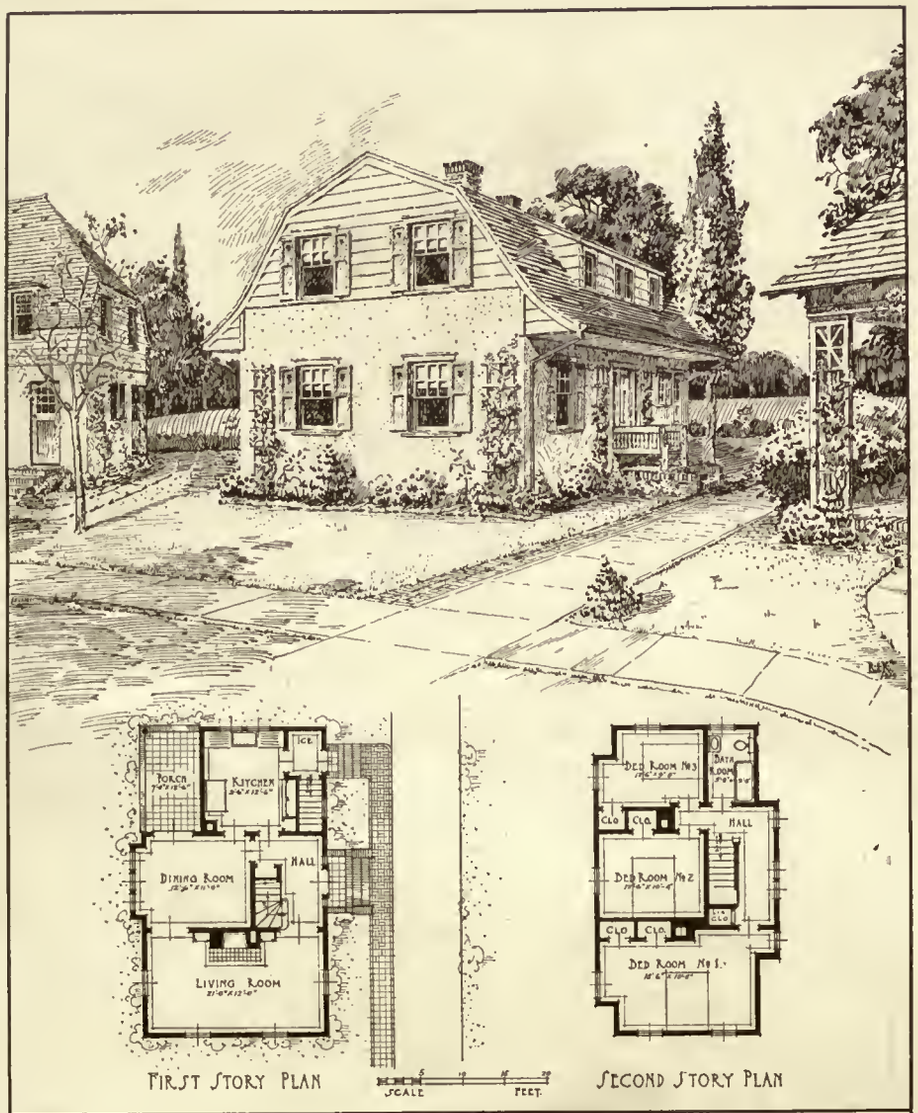
JOHN F SUPPES, ARCHITECT.



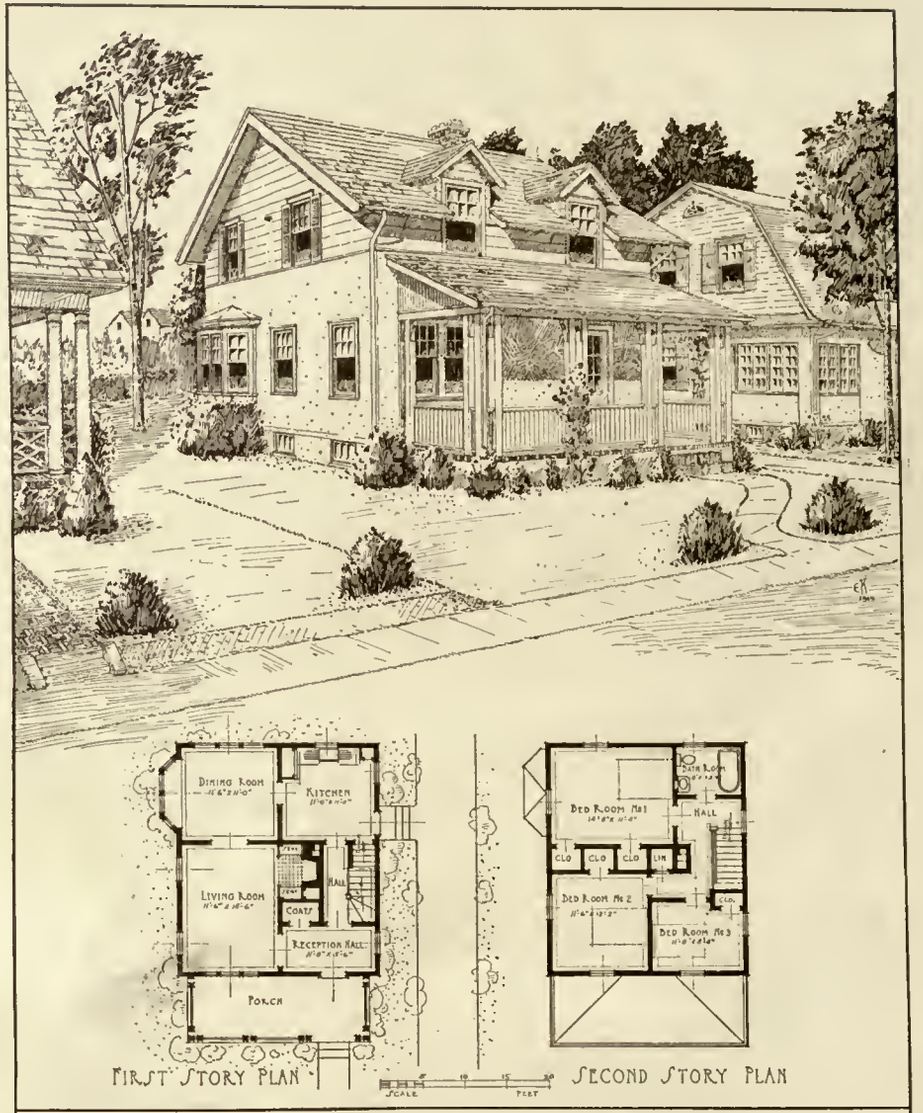
APARTMENT HOUSE FOR FIRESTONE PARK

AKRON OHIO

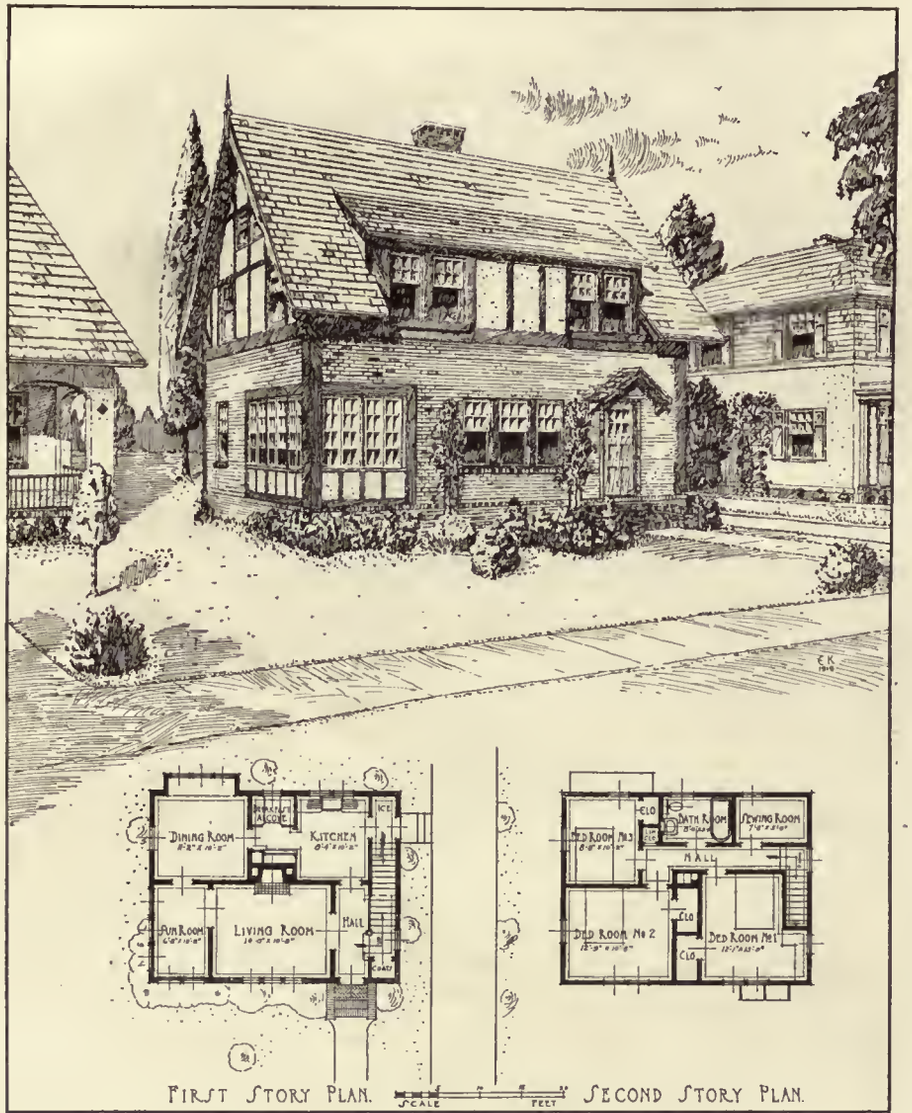
JOHN F. SUPPES, ARCHITECT



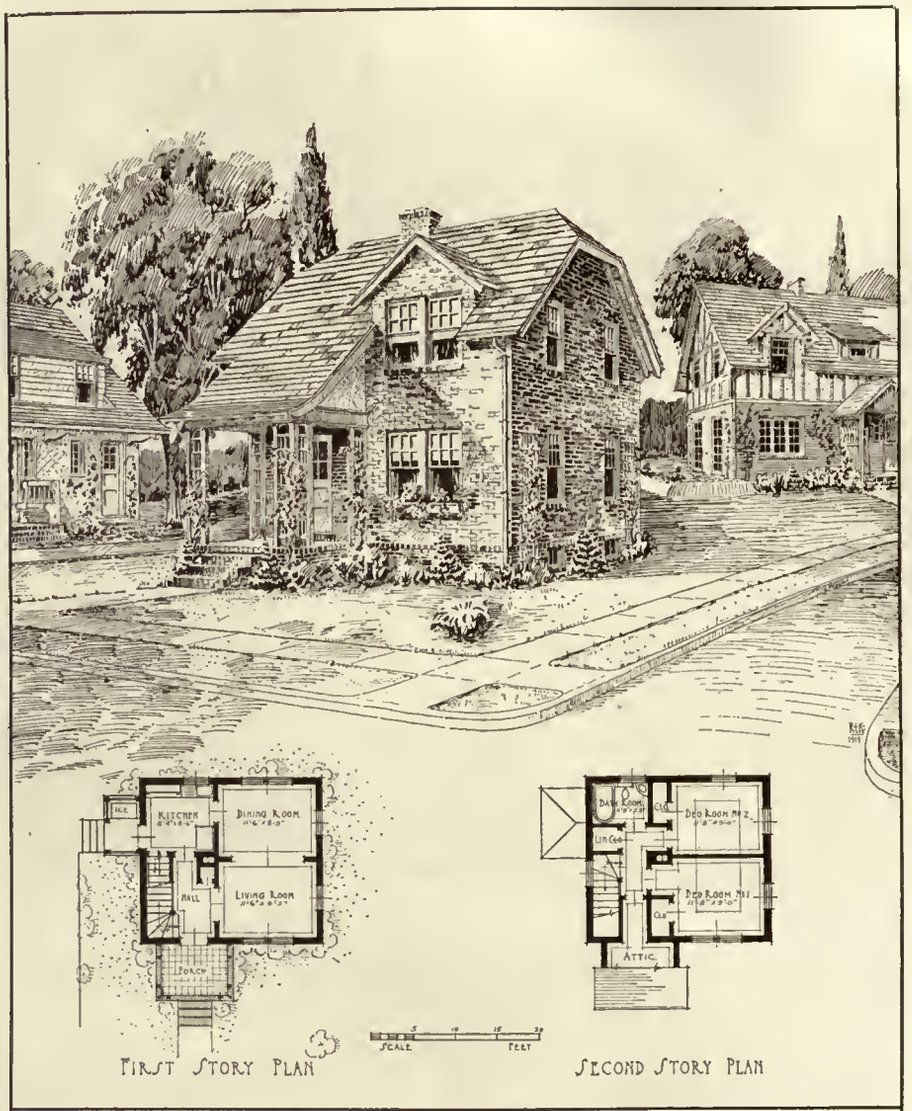
HOUSES FOR FIRESTONE PARK
AKRON OHIO
JOHN F. SUPPES ARCHITECT



HOUSES FOR FIRESTONE PARK
AKRON OHIO
JOHN F. SUPPES ARCHITECT



HOUSES FOR FIRESTONE PARK
AKRON OHIO
JOHN F. SUPPES ARCHITECT



HOUSES FOR FIRESTONE PARK
AKRON OHIO
JOHN F. SUPPES ARCHITECT

The Thirty-fifth Annual Exhibition of The Architectural League of New York

AT the building of the American Fine Arts Society, 215 West 57th Street, New York City. Last day for return of entry slips, Wednesday, December 31, 1919. Only days for the Reception of Exhibits, Wednesday and Thursday, January 14 and 15, 1920, 9 A. M. to 5 P. M. Smoker, Friday, January 30, 9 P. M. League Reception, Saturday, January 31, 3 to 6 P. M. Public Exhibition, from Sunday, February 1 to Saturday, February 28, inclusive. A special prize of $300 for the best design submitted by an Architect, Sculptor, and Mural Painter in collaboration, and the Helen Foster Barnett Prize of $50 for Sculpture. Subject for the Henry O. Avery and Collaborative Prizes:

"A WAR MEMORIAL"

An American city of about twenty-five thousand inhabitants wishes to commemorate permanently the fact that twenty of her sons lost their lives in the Great War and that one of them distinguished himself by an act of personal bravery worthy to place his name beside those of the heroes of the Civil and Revolutionary Wars.

Space for this purpose has been found at the end of the vestibule or entrance-hall of the contemplated municipal building.

This vestibule is to be twenty-five feet long by twelve feet wide and cannot exceed eighteen feet in height. The memorial is to consist of the decorative treatment of the wall at one end of this room. It should characterize the distinguished hero and should depict the nature of the action which won him fame. The names of all the twenty who gave their lives are to be incorporated, together with whatever inscriptions may be found necessary and appropriate.

No portion of the work should project more than two feet from the face of the wall.

Models to be submitted ¼ full size.

The special prize for Sculpture will be awarded on the sculpture element in this collaboration.

Models to be delivered at 215 West 57th Street, January 15, 1920.

THE HELEN FOSTER BARNETT PRIZE

The Helen Foster Barnett Prize for Sculpture, award $50, limited to statuettes, including any work under life size. Artists under 35 years of age only eligible and the prize shall not be awarded more than once to the same artist.

TO MAKE THE EXHIBITION A SUCCESS

The Committee particularly directs the attention of architects to the following statement which it makes in the hope that a clear understanding of its policy may inure to the benefit of exhibitors and to the success of the exhibition.

The effect of the exhibition as a whole is of the highest importance. The general impression made upon the visitor is stronger than that made by individual exhibits. To produce this impression it is obvious that the walls of the galleries should present an orderly and harmonious appearance. Exhibits containing large areas of white paper or having white or light-colored mounts conduce to a spotty and disorderly general effect. *Exhibitors are therefore advised that such exhibits are likely to be poorly hung or not at all;* and in case such are submitted, *the Committee reserves the right to remount, or modify the tone of the mounts of, any such accepted exhibits at the exhibitor's expense.*

Exhibitors are therefore urged to give thought and care not only to the selection of subject but to its tone, framing, and mounting. This is especially important in groups of separate units, particularly when composed of views of the same subject. Such groups should naturally be maintained, but frequently the tones, shapes, and sizes as submitted are so unmanageable that either the group must be broken up or some part of it be omitted.

Plans are particularly desirable—but unless they are well presented they may fail of acceptance.

The Committee particularly requests the submission of the work of Landscape Architects.

Remember that this exhibition should interest the Public and that the Public is strongly affected by presentation.

The Metropolitan Museum of Art—Exhibition of Modern French Art

THE exhibition was opened with a reception to members and their friends at the museum on the evening of Monday, December 15. It will be open to the public daily until February 1, inclusive.

This exhibition, which has been organized in Paris by the French Ministry of Public Instruction and the Fine Arts, with the co-operation of the artists' association known as the Triennale, will consist of contemporary French paintings, sculptures, drawings, prints, and examples of the decorative arts, all selected as representative of the French art of to-day. The interest the French authorities have taken in sending it to America may be judged from the facts that it is forwarded at the government's expense, and that it comes here under the patronage of the President of the French Republic, the Ambassador of France at Washington, the Minister of Public Instruction and Fine Arts, and the Director-General of the French Services in the United States, who has charge of its arrangements in this country.

In addition to the patrons, the French Government has named the following as an Honorary Committee of the exhibition: Paul Léon, Director of Fine Arts; Léonce Bénédite, Curator of the Luxembourg Gallery; Robert Brussel, Chief of the Service d'Etudes; Maurice Chabas, President of the Triennale; d'Esteurnelles de Constant, Director of the National Museums; Anatole le Braz, Professor at the University of Rennes; Gaston Liébert, Consul-General of France in New York; Marcel Rouffie, Inspector-General of the French Services in the United States; Marcel Knecht, and Lieutenant Cæsar Michaux, head of the Bureau of Fine Arts of the French Services.

Editorial and Other Comment

What Shall It Be?

IN New York we have been discussing, both artists and laymen, not without acerbity and some manifestation of strong personal feeling, the great question of a suitable war memorial. The Arch of Victory, under which thousands of our returning troops have marched, a temporary structure built at great cost, is passing into the hands of the dealers in second-hand building materials. The arch and its admirable sculptures will become a vague memory to the man of the street, a dim vision of a passing spectacle, a bit of mere civic scenery, a movie celebrating transient and immaterial things. To many looking at it from an angle of mere expediency, its passing will be welcomed, for in many ways it has proved a serious obstruction to traffic, and at best much of its significance and dignity was lost by its being placed among so many incongruous high buildings. The spirit of the Square and of Fifth Avenue are intensely modern, and somehow we feel that any permanent memorial, wherever it is placed, should be first of all modern in its purposes, and planned with an idea of usefulness.

We are a far cry from the ideals of a Roman triumph, from the celebration of the individual leader, whose personal pride and sense of power were paramount to the nation. What to us signify the arches of Constantine and Titus? Imperialism, if looked at with even a modicum of historical background, and imperialism is the thing the world has been fighting for four long years. Artistically, the Roman arches will always have interest; in architecture they will hold the attention of student and practitioner as long as they stand, as long as their memory survives in thousands of photographs and drawings. But they are symbols of personal pride, of the ego, conquest for power, the subjection of the world to arbitrary rulers, the practical enslavement of subjugated peoples.

If there is one thing that the war has taught above all others it is the great idea of mutual sacrifices for the general welfare, of the forgetting of the individual in the one cause, our country, for which all were supposed to be working as a unit. It would seem as if the idea of a great memorial building, a building that embodies the best possible traditions of architectural beauty and dignity, planned for service, would be in keeping with the times. Such a building could be made a magnificent club-house for men of the army and navy who have served their country, a place where every comfort and convenience of the rich man's private club would be at their service. A gymnasium, a great swimming-pool, bowling-alleys, billiards and pool, hundreds of simply and comfortably furnished living rooms, a restaurant that could be run to meet the needs of the modest purse, should be part of it. It could be conducted on the plan of other clubs; only at the outset it must be established and bound hard and fast by rules that would forever keep it for all the men who served, and that would not permit it to become in time merely a place for those who could afford it. It should be liberally endowed, so that merely nominal dues would make membership possible for every man that would care to join. It would be well, also, to provide a great assembly hall and opportunities for study. Classrooms should be provided for those who might care to pursue the study of art, the trades, or business; ample opportunities for playing for those who would play and seek recreation; the privileges of study and guidance for those who felt the need of better fitting themselves for a wider service in the world at large.

Would it not be a good plan to find out from the men themselves some idea of what kind of a memorial they think would seem best? There is little question that it should be something more than a mere abstract idea of beauty, a mere monument representing so many thousands of dollars. The Greek temples are nearer to our idea of memorials in that they expressed in their wonderful art and refinement the national spirit. But we do not want Greek temples. They were cold and formal in their intent.

Will it not be possible to express in whatever we do something of the sentiment connoted in the word "buddies," something of fraternalism, clear-visioned, unselfish, unified, shoulder-to-shoulder striving for all things that make our country better—better men, better citizens, greater power against the elements of disloyalty and destruction that the war has shown us are menacing us from within?

How Are We Going to Build Them?

"IN the United States every year there is need of approximately $3,000,000,000 worth of building construction to meet the needs of the country. Of this total perhaps $2,000,000,000 worth is required for the housing of the people, the rest being used for industrial and amusement purposes.

"To-day in the United States we are short nearly $4,000,000,000 worth of houses for our people to live in. We are something like a million homes behind the need. And for that reason those who have made a business of the construction of houses should have no misgivings about the beginning of construction, despite the high prices. Every assistance should be extended to enable our people to build or buy their own homes. Where there is a community of home owners no Bolshevists or anarchists can be found. It is written in history since the beginning of civilization that where people reside in their own houses there the best in government and civilization exists. And so if this Congress can do anything at all to relieve the present needs of the people in the matter of homes, it should do so at once. I have pointed out two ways in which they can help: first, by creating this home-loan banking system, thereby making available at least $2,000,000,000 of existing assets for building purposes; and, second, by relieving from taxation the income on a limited amount of real-estate mortgages in the hands of individuals, thereby encouraging investment in securities of this character, in the end making sufficient funds available for building purposes. These measures, in my opinion, would be exceedingly helpful, and I hope senators will examine them and, if they agree with me, assist in securing their enactment."

The above extract from a speech by Senator William M. Calder clearly points out a condition, and proposes some encouraging ways of solving the building problem.

We are too prone to mind our own business, in general, and are unmindful of the intense seriousness of this housing question. In the cities it has passed the "waiting for better times" stage, and becomes a question of downright suffering and deprivation. Something must be done, and done now.

The limit of rents for the poor and the professional classes has been reached—exceeded, in fact—and we hear already of a promise of *further* increases next year. There are thousands of families all over the country who have been suddenly faced with the problem of buying the house they have lived in at a greatly advanced price, or hunting for a new place, often impossible to find.

Space for Monumental Buildings

IT would seem as if no argument would be necessary in planning an addition to a group of State buildings to make it seem advisable to consider the providing of sufficient space for properly displaying their monumental character and architectural beauty. It is to be sincerely hoped that the idea of a Capitol Park at Albany will be favorably considered. If there have been mistakes made in the placing of the new Capitol Building, in the location of the Educational Building, there is every reason now for preventing any further mistakes. We are advised that an opportunity offers for the formation of a group of buildings to the west, or in the rear of the Capitol, as suggested by the present State architect and his two predecessors. It is clearly so obviously the thing to do, it is hard to see how there is a chance for debate except on the single ground of cost.

The question of cost these days is a paramount one in all things, but there are few things more costly in the long run than poor planning of civic centres, or the submerging of dignified State buildings in an environment of incongruities.

The following letter will make the situation clear:

"The State of New York is now confronted with a condition where something more than the enduring character of the buildings is involved. We are about to erect a new office building for State departments, and are in danger of ignoring the greater question of an artistic setting for existing and for future State structures. The character of the buildings may change from generation to generation, but when we establish a grouping plan, wherein may be set forth the beauty and grandeur of the whole, I think it will be conceded that we should build, not for a lifetime, but for centuries.

"Unless the State officials act quickly within the next two or three months, we may commit ourselves to an irreparable blunder. Not merely would this mistake forever conceal the majestic dimensions of our magnificent Educational Building—said to be the most beautiful in the United States—but forever destroy the artistic setting of the capitol and the State buildings yet to come. Why not head off this great blunder, the evil effects of which will be felt during our own and succeeding generations, before it is too late?

"I speak not merely as an Albanian, but as a citizen of the State, when I plead for the creation of a park in the space immediately west of the capitol, instead of its use, as now proposed, for the new State office building. The facts of the situation are simply these: The legislature at the session of 1918 appropriated $700,000 for the purchase of the block of land west of the capitol, where the old buildings have been razed.

"At the session of 1919 an additional $450,000 was appropriated for part of the cost of the new State office building. Of this amount, $150,000 was made available this year for beginning the construction of the foundation. The trustees of public buildings have authorized the State architect, Lewis F. Pilcher, to proceed with the plans. It is understood that they have authority to prevent further expenditure pending the meeting of the legislature, January, 1920. It will then be for the legislature to decide whether the original plan to erect the building on this plot should be carried out, or whether another plot of land shall be obtained on which to erect the new office building."

The Thumb Tack Club of Detroit

THE architectural men of Michigan have formed a club called "The Thumb Tack Club of Detroit." This club is planned along the general lines of the Boston Architectural Club and the T. Square Club of Philadelphia.

All persons engaged in or interested in architecture are eligible for membership, so that the club will have every opportunity for advancement of public appreciation of architecture. It is intended to carry on a campaign against all intrusions of the city and parks with hideous examples of buildings and monuments. There will be a Beaux Arts atelier and other special classes for training the young men and lectures for the older men; each year an architectural exhibit, at which examples of architectural work from all large cities will be submitted and medals awarded. A competition is now under way for the new emblem of the club. Some of the architects are to start a scholarship next year for the successful entrant in a competition, the details of which are not yet arranged.

There should be a decided advance in the ability of the architectural students of Detroit due to the activities of the club, and the organization should prove a benefit to the community.

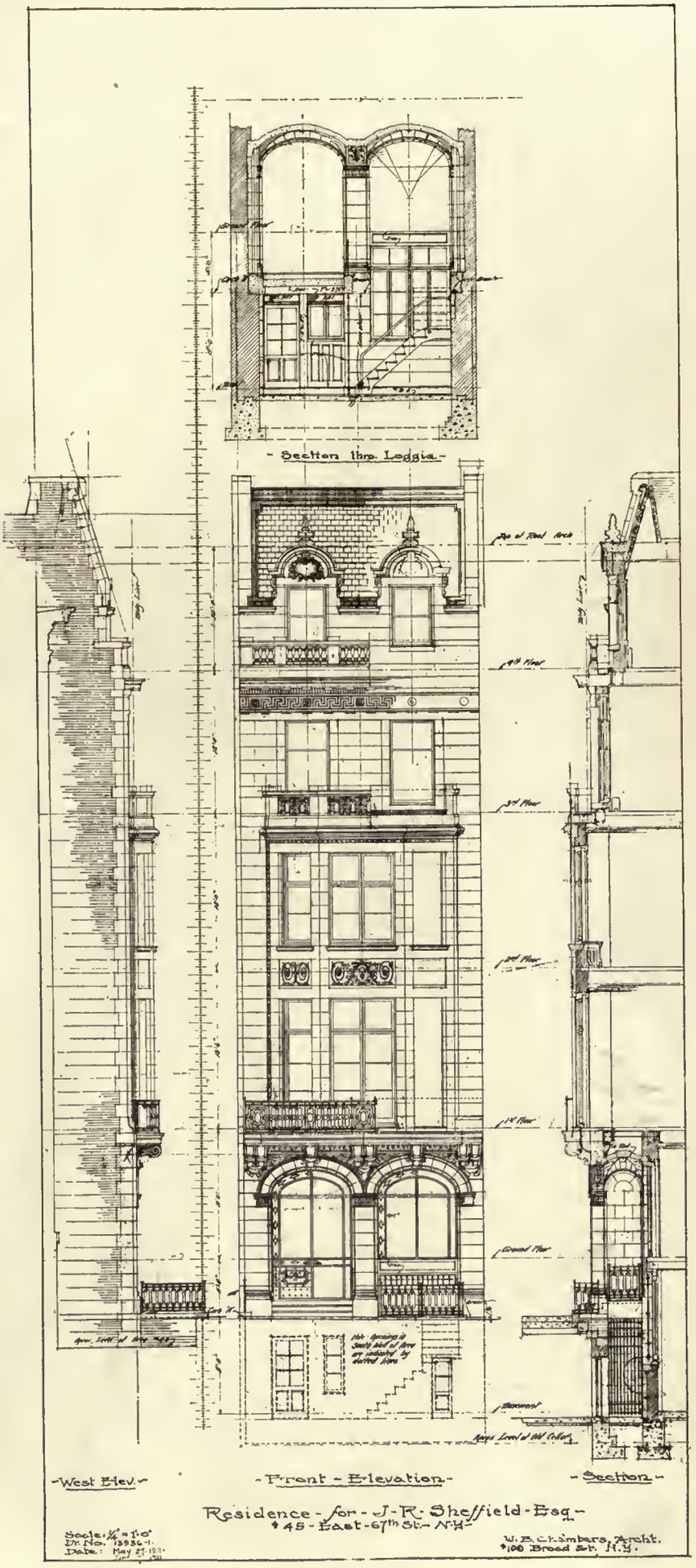
The clubrooms are located in an old house in the business centre of Detroit, at 83 Fort Street. The attic forms very interesting classrooms, the second floor is arranged for the clubrooms, and the first floor is rented for offices.

The entire management of the club is vested in the hands of an executive committee, which consists of the following men: Mr. Rowland, of Albert Kahn's office, president; the other six members are: Mr. Murphy, of the firm of Esselstyn, Murphy & Hanford; Mr. Keough, of the firm of Van Leyen, Schilling & Keough; Mr. Leone, of Smith, Hinchman & Grylls; Mr. Kapp, of the Wills-Lee Automobile Company, and Messrs. Sukert and French, of Albert Kahn's office. Clubrooms are open at all times to out-of-town professional visitors.

Winter Home-Building

More than 72 per cent of the inquiries for home-building information and house plans come from prospective builders in the winter and spring months, particularly the winter months, according to a recent analysis made by the Southern Pine Association. Of 135,089 requests for building helps, 97,433 came between November 1 and May 31, and of these 97,433, 17,070 came in November and 17,921 in February. The season of greatest actual building activity is, of course, during the open warm-weather months, but the planning and deciding are done in the winter and early spring.

ENTRANCE-HALL, RESIDENCE, J. R. SHEFFIELD, 45 EAST 67TH STREET, NEW YORK. Walter B. Chambers, Architect.


- Section thro. Loggia -
Top of Roof Arch
4th Floor
3rd Floor
2nd Floor
1st Floor
Ground Floor
Basement
Apex Level of Old Cellar
-West Elev.-
- Front - Elevation -
- Section -
Residence - for - J - R - Sheffield - Esq -
#45 - East - 67th St. - N.Y.
Scale: 1/4" = 1'-0"
Dr. No. 13936-1.
Date: May 27 1911
W. B. Chambers, Archt.
#100 Broad St. N.Y.

DRAWING–ROOM.

DINING–ROOM.

Walter B. Chambers, Architect.

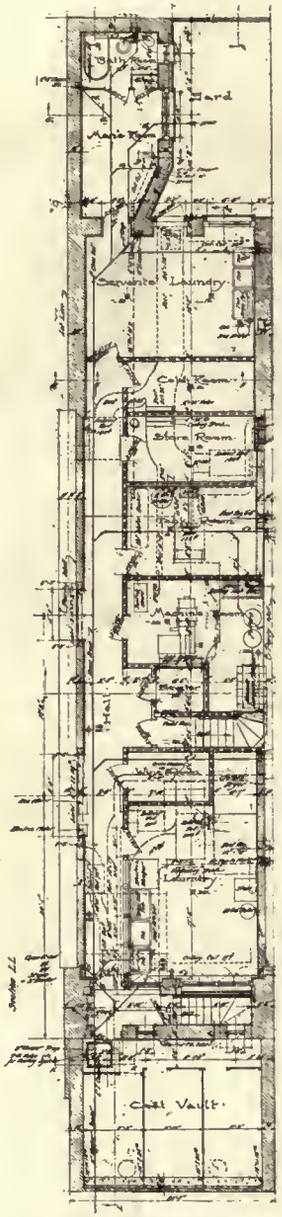
RESIDENCE, J. R. SHEFFIELD, 45 EAST 67TH STREET, NEW YORK.

LIBRARY.

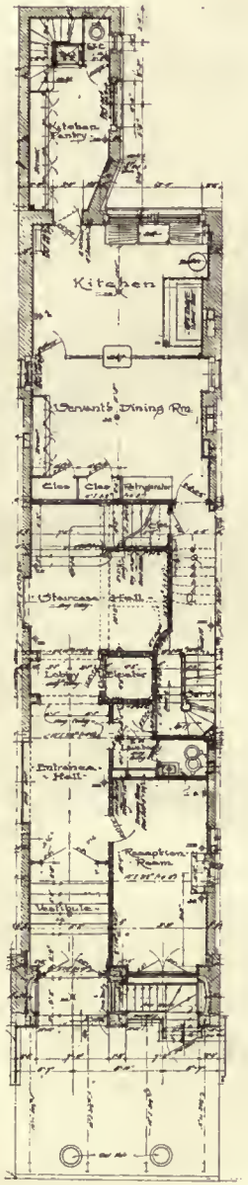
RECEPTION-ROOM.

Walter B. Chambers, Architect.

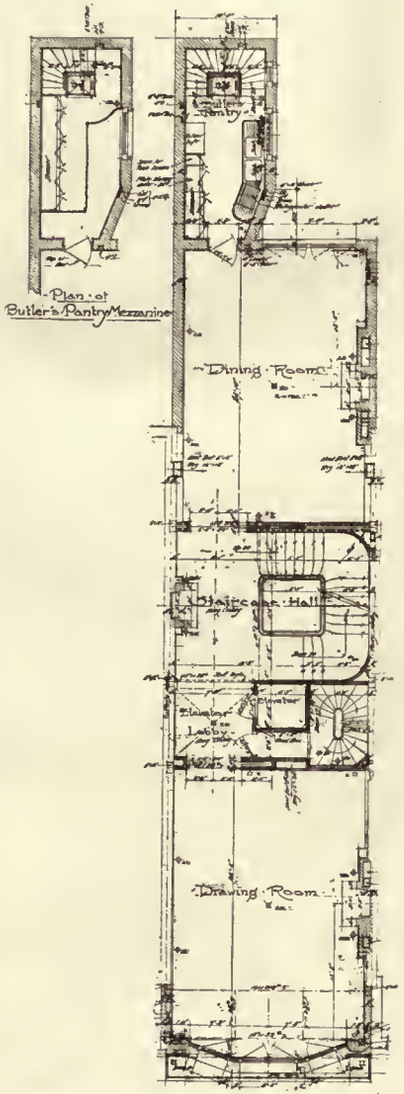
RESIDENCE, J. R. SHEFFIELD, 45 EAST 67TH STREET, NEW YORK.



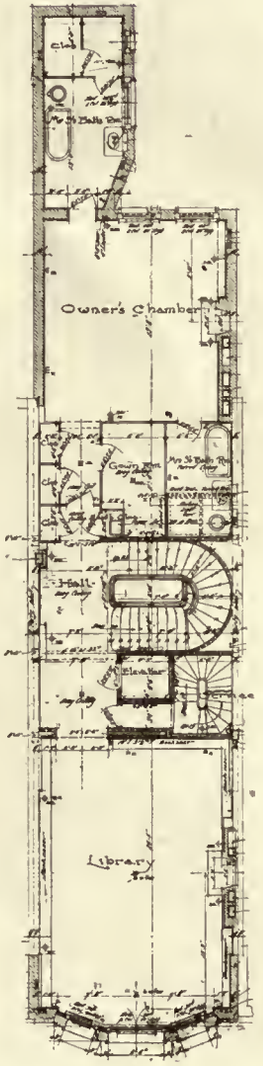
- Basement - Plan -



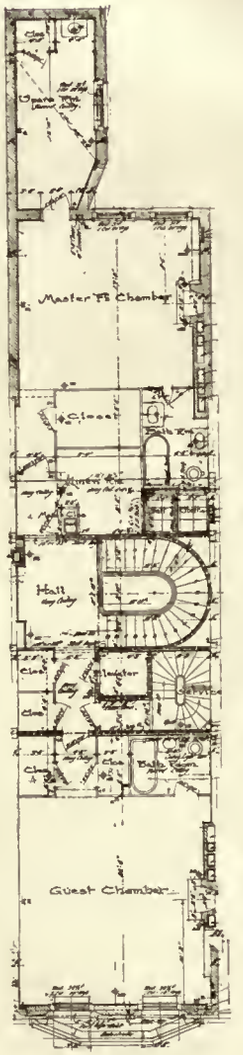
- Ground - Floor - Plan -



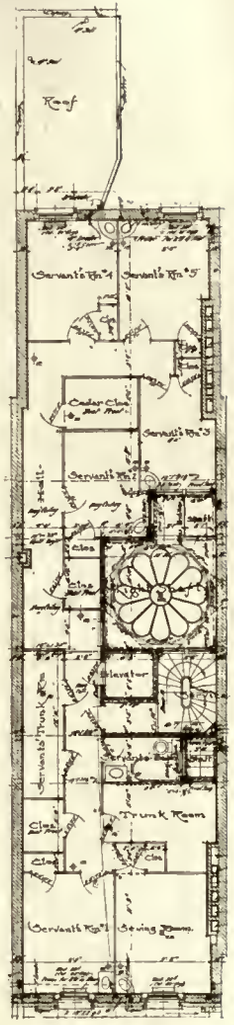
- First - Floor - Plan -



- Second - Floor - Plan -



- Third - Floor - Plan -



- Fourth - Floor - Plan -

PLANS.

RESIDENCE, J. R. SHEFFIELD, 45 EAST 67TH STREET, NEW YORK.

Walter B. Chambers, Architect.

PORCH OVERLOOKING TERRACE, BLIND BROOK CLUB, PORTCHESTER, N. Y. Frank Ashburton Moore, Architect.

THE CLUB-HOUSE.

THE TERRACE AND GREEN.

Frank Ashburton Moore, Architect.

BLIND BROOK CLUB, PORTCHESTER, N. Y.

LOUNGE.

CLUB-ROOM.

Frank Ashburton Moore, Architect.

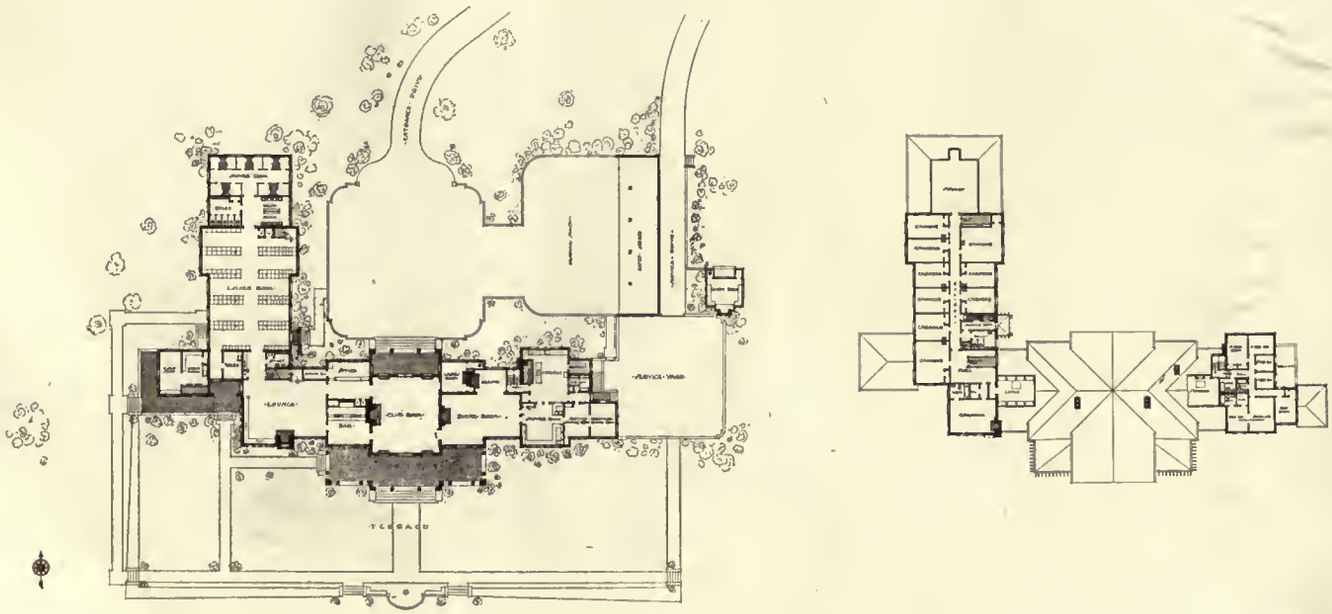
BLIND BROOK CLUB, PORTCHESTER, N. Y.

DETAILS.

Frank Ashburton Moore, Architect.

BLIND BROOK CLUB, PORTCHESTER, N. Y.

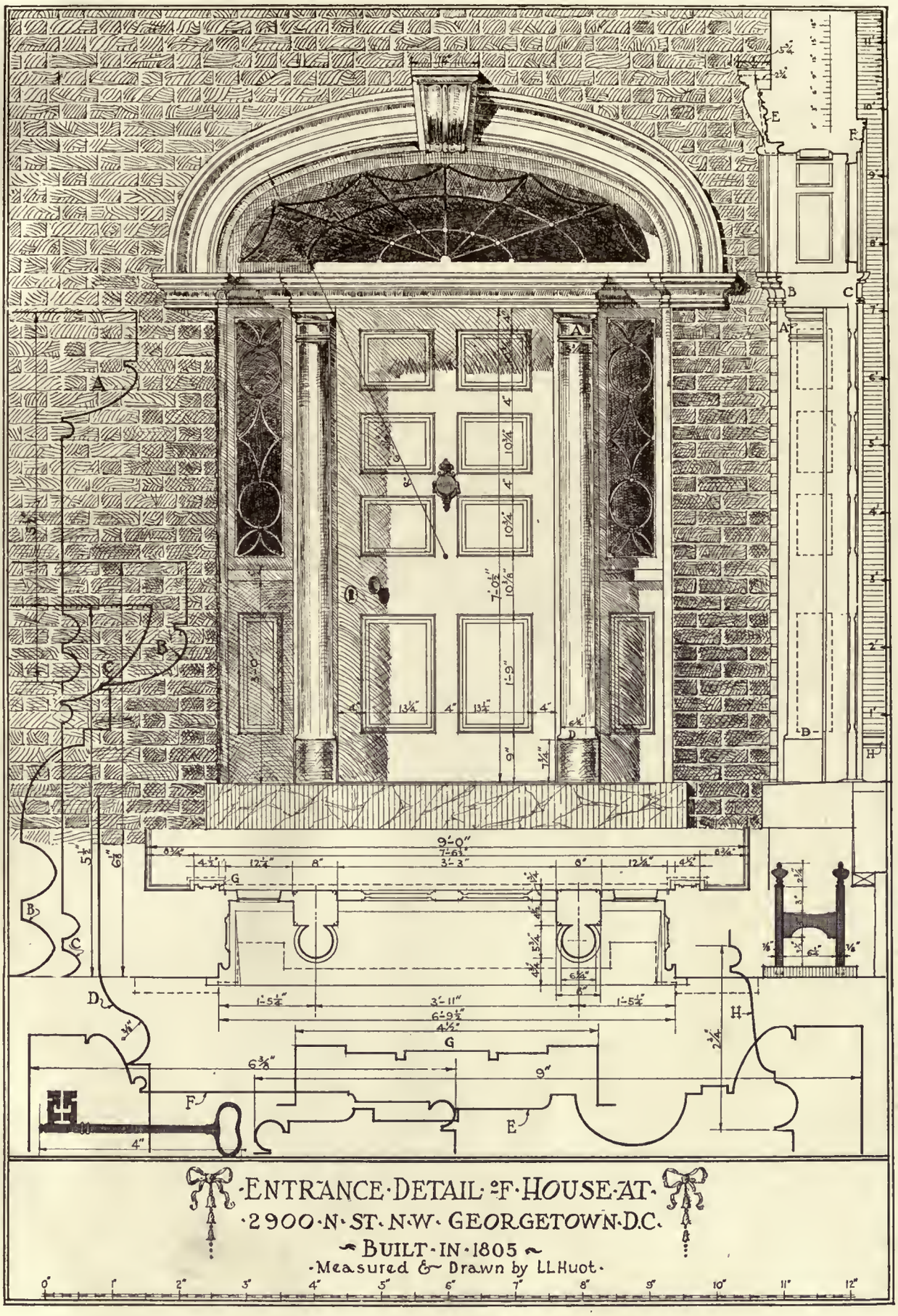
ENTRANCE TO LOCKER-ROOM.

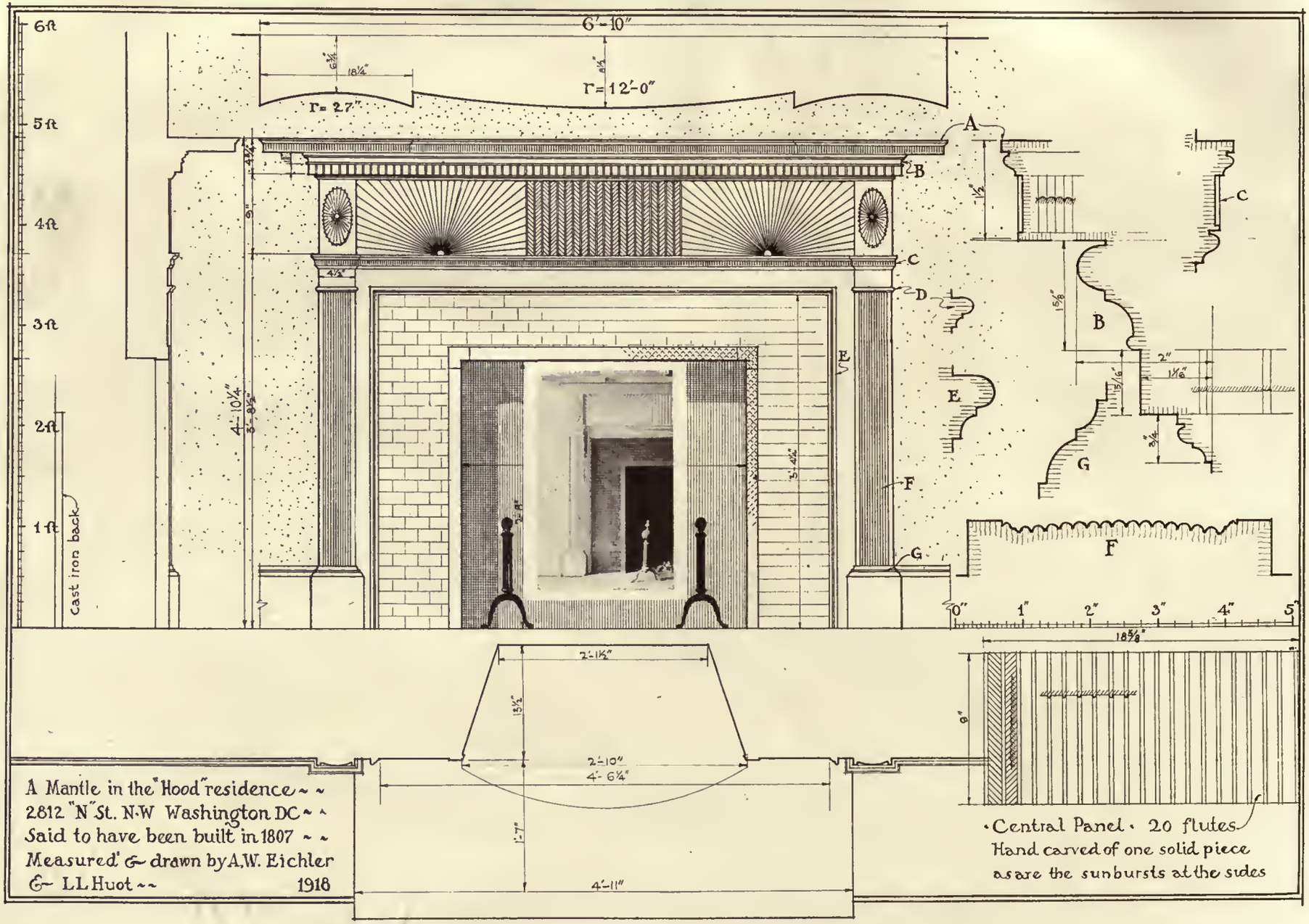


PLANS.

BLIND BROOK CLUB, PORTCHESTER, N. Y.

Frank Ashburton Moore, Architect.
Hinchman & Pilot, Landscape Architects.


ENTRANCE DETAIL OF HOUSE AT
2900 N. ST. N.W. GEORGETOWN D.C.
BUILT IN 1805
Measured & Drawn by L.L.Huot.


6'-10"
r=12'-0"
r=27"
6ft
5ft
4ft
3ft
2ft
1ft
cast iron back
A
B
C
D
E
F
G
0" 1" 2" 3" 4" 5"
2'-1½"
2'-10"
4'-6¼"
4'-11"
1'-7"
Central Panel · 20 flutes
Hand carved of one solid piece
as are the sunbursts at the sides
A Mantle in the "Hood" residence ~ ~
2812 "N" St. N.W Washington DC ~ ~
Said to have been built in 1807 ~ ~
Measured & drawn by A.W. Eichler
& L.L Huot ~ ~ 1918

RESIDENCE, MRS. R. B. WORTHINGTON, BAYOU BONITA, ST. PETERSBURG, FLA. W. S. Shull, Architect.

LIVING–ROOM.

DINING–ROOM.

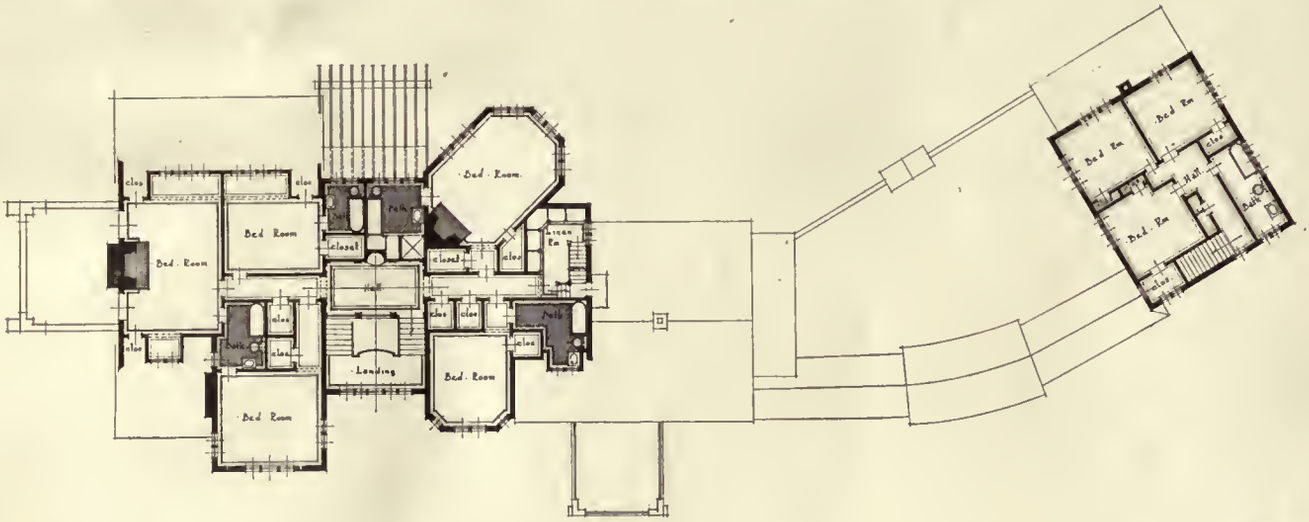
W. S. Shull, Architect.

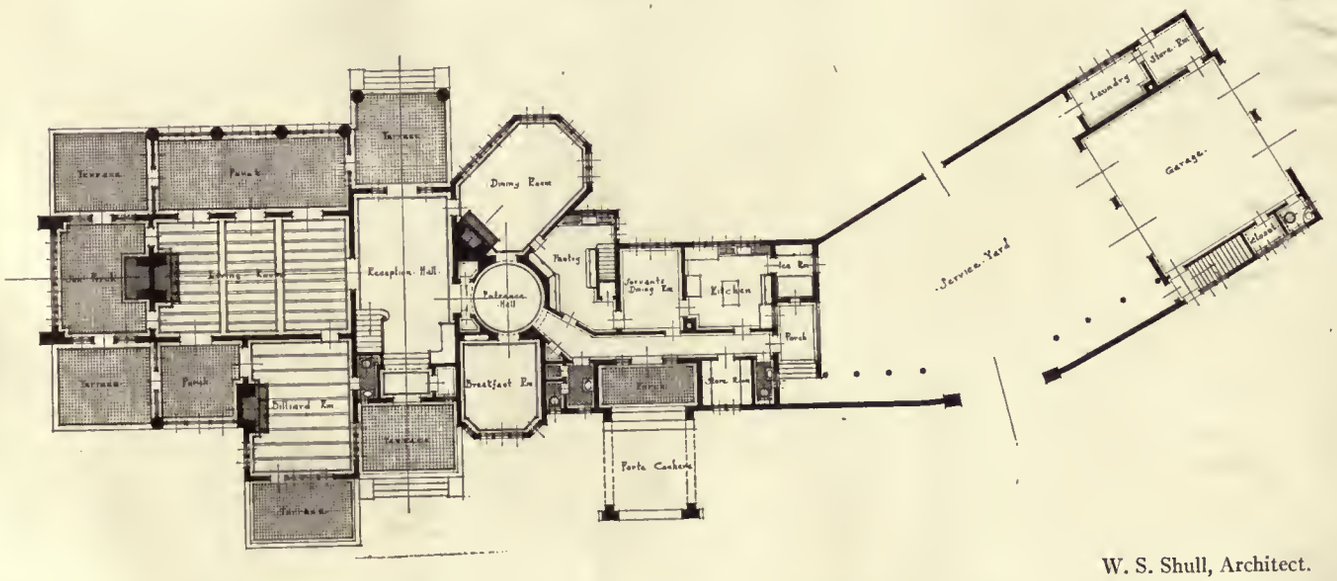
RESIDENCE, MRS. R. B. WORTHINGTON, BAYOU BONITA, ST. PETERSBURG, FLA.

GARAGE.

RECEPTION-HALL. W. S. Shull, Architect.

RESIDENCE, MRS. R. B. WORTHINGTON, BAYOU BONITA, ST. PETERSBURG, FLA.





W. S. Shull, Architect.

RESIDENCE, MRS. R. B. WORTHINGTON, BAYOU BONITA, ST. PETERSBURG, FLA.

The Carrère Memorial

From the Address by Joseph H. Freedlander

Chairman, at the Unveiling of the Carrère Memorial at Ninety-eighth Street and Riverside Drive on Thursday, October 16, 1919

"THE memorial to John Merven Carrère which we unveil to-day may, with peculiar fitness, be termed a labor of love, for it came into being as the result of a spontaneous testimonial on the part of his friends to the admirable qualities of this remarkable and many-sided man.

"Taken off in the very prime of his professional career, he left a gaping void, for to the fine arts and to civic betterment he had rendered at all times inestimable service. It is a situation that I can best describe by saying that, although some years have elapsed since his untimely end, no one has taken his place.

"His virility, his keen conception of the dignity of the art of architecture, his willingness to be the standard-bearer par excellence of an idea, made him at all times an acknowledged leader in the profession.

"He found time for all, notwithstanding the exaction of his busy workaday life. I believe that I correctly interpret the sentiment of the architectural profession when I say that we not only esteemed but that we loved him —we loved his high sense of honor, his kindliness, the sweetness of his nature, and the consideration and tact with which he handled the great mass of professional questions continually placed before him for solution by his colleagues.

"It is to the affection in which the profession holds his memory that this memorial is due.

"The memorial, designed by Mr. Carrère's partner, Thomas Hastings, is the only monument, with the exception of the Richard Hunt Memorial, erected to any architect in this country. It speaks well for the increasing public appreciation of belles-lettres and the fine arts that a place in one of the city's garden-spots should have been set aside to perpetuate the memory of a great artist.

"Here in this lovely park, in the autumn, in the winter time, through the hot, lazy summer days, let the passer-by who holds in greatest affection all that is beautiful in life pause an instant to lay at this shrine a token of appreciation to one who carried high at every turn the banner of the ideal and the true."

Section of Terrace Wall with tablet to John Merven Carrère.

The committee in charge of this memorial included the following distinguished members of the architectural profession: Joseph H. Freedlander, Chairman, Donn Barber, Electus D. Litchfield, H. Van Buren Magonigle, William Rutherford Mead, Benjamin Wistar Morris.

Selecting the Right Roofing Materials

By H. Vandervoort Walsh

IN designing a building, the architect selects its roofing materials with a special point of view, quite different from that of either the engineer or the builder. On account of this fact, the accessible information is not in a form to meet his requirements, for most of it is written for the latter individuals.

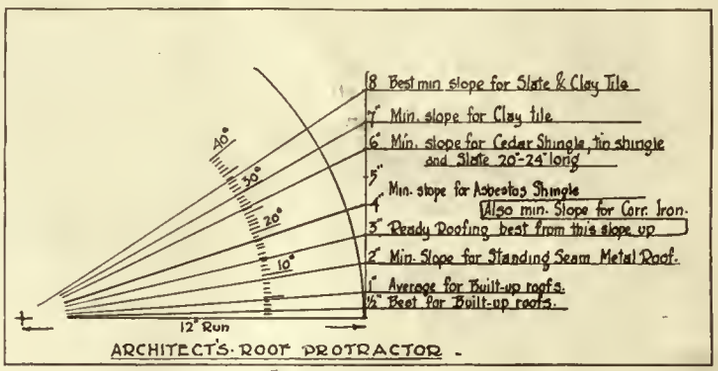
It is not a simple matter to plot the workings of the architect's mind as he singles out the kind of roofing material he will use on the building, but in a general way it probably runs in the following sequence, or if it does not, it ought to. First he is influenced by the artistic requirements, and makes a tentative selection of some material which fits in best with his design. As he proceeds further, he studies the required framing and construction necessary to support this type of roof, and then he gathers all the information on the fabrication features of the material itself for use in his detail drawings and specifications. Finally as a complete mental check, he takes a comparative view of such things as fire-resisting qualities, durability, and costs.

The very first steps, then, in the selection of a roofing material are almost entirely influenced by artistic reasons. Even though the architect may tackle his preliminary sketches with a predetermined conclusion on the kind of material he will use, he nevertheless has arrived at this decision by mental-picture designing. It often seems as though the cost alone influenced the selection, but in reality it is the artistic reason, for he will build up his design around the roof selected. Usually, however, in the first rough sketches, little thought is given to the actual materials that will be eventually used, but the design is studied for composition in line, color, light, and shade, with the result that such a thing as the pitch of the roof is determined by artistic reasons alone. Whether the roof shall be flat or sloping is a matter that is worked out in the designing. If it is flat, then the roofing material requires no artistic treatment, since it will not count in the general effect of the building. On the other hand, if the roof is sloping, it must be handled from a pictorial standpoint, and selected accordingly.

For example, the design may be a country house in the Italian villa style, and the roof in the preliminary sketches has evolved to a pitch of four inches in one foot. Now the very requirements of the style and the design demand the use of a clay-tile roof. Thus the selection of the material is determined and the pitch worked out; but the problem is to make the two co-operate in giving a roof that will not leak. As a matter of fact, in our climate a pitch of four inches in one foot is too slight for a clay-tile roof, and the chances are that it will leak, which proves that the slope of a roof must be established by both the design and the practical requirements of the material.

Certain observations have been made along these lines, and tables have been published here and there concerning the best pitch for different kinds of roofing materials. They are not mathematical conclusions, but merely rules of the thumb based upon the experience of many men. For instance, there has been established the safe minimum pitch for wood shingles, clay-tile, corrugated-iron, and standing-seam metal roofs. Also it has been observed that ready-roofing materials are best with higher pitches, while built-up roofs will run under the heat of the sun if they have a pitch exceeding three inches in one foot, and the average is one inch to the foot. Now this information is in no accessible form for the architect, and for this reason a device called the "Architect's Roof Protractor" has been prepared. It is the quick guide to the necessary information.

Related very closely with the pitch is the line effect that the roof will exhibit. In general the various materials which are used on sloping roofs display either conspicuous horizontal lines or marked vertical lines running from the eaves to the ridge. Certain types show a half-way effect where neither horizontal nor vertical lines predominate. In any case, all of the materials used on sloping roofs which show as part of the design of a building may be classified into two types: the scale or shingle type imitating Nature's system of protection as exemplified in a fish, or the sheet type


8" Best min slope for Slate & Clay Tile
7" Min. slope for Clay tile
6" Min. slope for Cedar Shingle, Tin shingle and Slate 20"-24" long
5"
4" Min. slope for Asbestos Shingle
Also min. Slope for Corr. Iron.
3" Ready Roofing best from this slope up
2" Min. Slope for Standing Seam Metal Roof.
1" Average for Built-up roofs.
½" Best for Built-up roofs.
40°
30°
20°
10°
12" Run
ARCHITECT'S ROOF PROTRACTOR

counterfeiting in a poor way Nature's uniform skin covering. For simplicity the classification is shown in the following form:

A. Scale or Shingle Type
1. Wood shingles.
2. Slate.
3. Clay tile.
4. Asbestos shingle.
5. Metal shingle.
6. Cement shingle.
7. Ready-roofing shingle

B. Sheet Type
(*a*) Standing seam or flat seam
1. Tin roof.
2. Copper roof.
3. Lead roof.

(*b*) Lap seam
1. Ready roofing.
2. Canvas deck.
3. Corrugated iron.
4. Corrugated asbestos.
5. Corrugated wire glass.

C. Plastic Roofs
These are used for flat roofs and do not enter into the discussion of artistic merit, and are built-up roofs of tar and felt, patent preparations, etc.

Now, of the above roofs, the kind which exhibits marked horizontal lines is the square, shingle type of wood, slate, asbestos, tile, etc. Those which effect marked vertical lines are the standing-seam metal roofs. The mixed horizontal

and vertical lines are displayed by Spanish or French clay tiles, corrugated roofs, etc. Diaper patterns are secured by the shingle type laid to certain brick pattern bonds, like the English or French bond. Imitation thatched roofs of wood shingles or ready-roofing shingles give soft flowing curves if laid properly. The smooth surface with practically no dominant lines is realized by the flat-seam roofs of metal, although the interlocking sheet is plain enough to give an ugly appearance within a certain radius.

Here again the designer probably has arrived at some conclusion in his sketches as to what kinds of lines he wants to emphasize in his roof. In order to produce them it is necessary to select the type of roof which by its nature creates them.

Next to line effect comes texture and color. We can divide roofing materials roughly into two texture groups: those which display comparatively smooth monotone surfaces, and those which exhibit rough textures with mottled colors. However, we can mix these two classes, with doubtful value, and have smooth surfaces with mottled colors. Many ugly examples of this practice are noticeable in slate roofs. If it is done, the utmost taste must be used. We can also see many examples of rough-texture roofs with monotone colors, but generally they would be improved by more variety of tone.

These two classes of roofs have characteristics that are quite pronounced. The smooth-texture roof with the monotone color is more dignified and better suited to classical or monumental buildings. On the other hand, the rough-texture and mottled-colored roof is more suitable to semi-public buildings and residential work. However, such general statements have their limitations, and, after all, the good taste of the designer determines the result.

All smooth monotone-colored roofs are not successful in application, and the designer should learn to feel their fitness. For instance, the asbestos shingle of smooth, plain red color is very ugly in most cases, for its texture is uninteresting and its color thirsty dry. When such a roof is placed on a country house, its very slickness causes an irritating sense. For that reason the manufacturers of asbestos shingles have been obliged to make a rough-edged shingle in varieties of colors. But it is possible to use the smooth asbestos shingle to good advantage on buildings with a certain trimness of finish. In fact, the designer has the same problem to select the texture of the roof that the actor has in selecting the right kind of a hat for his characterizations. To place a slick, smooth silk hat on a tramp is incongruous, in the same way that a broken straw "lid" appears ridiculous on a man in dress suit. Buildings have characters and roofs have characters, and it is the designer's duty to fit them together properly. For an accessible classification of materials along these lines the following is suggested:

A. Smooth Texture and Monotone Color

1. Wood shingles, dimension and plain, stained or painted in monotone.
2. Slate, cut smooth and sharp and culled for uniform shape and color.
3. Clay tiles of shingle pattern of uniform color.
4. Asbestos shingle of the smooth variety.
5. Metal shingles of shingle type.
6. Cement shingles.
7. Ready-roofing shingles.
8. All kinds of metal roofing.
9. Ready roofing.
10. Canvas decking.
11. Corrugated roofs in large sheets.

B. Rough Texture and Mottled Colors

1. Hand-split shingles or shingles dipped in various-colored stains and applied at random. Imitation thatch.
2. Rough-cut slate laid in the European fashion with a skilful blending of different colors and gradation of sizes.
3. Clay tiles of varied colors or special designs, as French, German, Imperial, etc.
4. Rough-edged asbestos shingles with skilful blending of varied colored units.

Having selected the roofing material according to the artistic needs of the design, the next thing that the architect must consider is the correct designing of his roof framing to support it in safety. He must consider the weight of the material, the weight of the snow load with the pressure of the wind. The wind-pressure varies with the slope, and the snow load with the pitch and climate. On an average the increasing weight, due to the snow load as the pitch flattens, is balanced by the loss of weight, due to the decreasing load of wind-pressure, and can be considered to remain about thirty to forty pounds per square foot. This must be added to the weight of the roofing material itself, and also to the weight of the necessary foundation, such as sheathing-boards, felts, book tile, etc. To support this total load, the size of the roof-framing members must be calculated. It is therefore of great importance to have a tabulated list of the various approximate weights of different roofing materials as applied to the roof. Such tables are scattered and are often difficult to find. The following is offered as a collective bit of information along this line:

A. SHINGLE TYPES

1. *Wood shingles:*

LENGTH	WEATHER-GAUGE	WEIGHT LBS. PER SQ. FT. Cedar	Pine
14″	4″	2.1	2.33
15″	4½″	2.0	2.22
16″	5″	1.92	2.13
18″	5½″	1.97	2.18
20″	6″	2.0	2.22
22″	6½″	2.03	2.26
24″	7″	2.06	2.29

2. *Slate shingles:*

3/16″ thick	6.5 lbs. per sq. ft.
¼″ "	8.75 " "

3. *Clay tile:*

Plain, ordinary shingle type 6″ x 13½″	11.0 lbs. per sq. ft.
Ludowici type	
Spanish	9.5 " "
Imperial German	9.2 " "
" closed shingle	8.5 " "
" English	10.0 " "

Add 2 lbs. for tile laid in cement mortar.

4. *Asbestos shingles:*

LIGHT WEIGHT	
16″ x 16″	2.61 lbs. per sq. ft.
12″ x 12″	2.72 " "
8″ x 8″	3.00 " "
HEAVY WEIGHT	
16″ x 16″	4.16 lbs. per sq. ft.
12″ x 12″	4.32 " "
8″ x 8″	4.8 " "
8″ x 16″	4.16 " "
6″ x 12″	4.32 " "
4″ x 8″	4.8 " "

5. *Metal shingles:*

Tin... 1.2 lbs. per sq. ft. Copper... 1.75 lbs. per sq. ft.

(*Continued on page* 340.)

HOUSE, J. HARRY ALEXANDRE, GLEN HEAD, LONG ISLAND (ALTERATION)

Warren & Clark, Architects. Marian C. Coffin, Landscape Architect.

REAR.

DETAILS IN GARDEN.

Warren & Clark, Architects. Marian C. Coffin, Landscape Architect.

HOUSE, J. HARRY ALEXANDRE, GLEN HEAD, LONG ISLAND (ALTERATION)

6. *Cement-tile shingles:*

Factory type 26″ x 52″	14.5 lbs. per sq. ft.
Other types	16.0 " "
Hollow type	25.0 " "

7. *Ready-roofing shingles:*

Average	3.5 to 4.0 lbs. per sq. ft.

B. SHEET TYPES

Tin roofs standing and flat seam	1.0 lbs. inclusive of felt
Copper " " " " "	1.5 " " " "

Ready roofing:

1 ply..... 3.5 lbs. 2 ply..... 4.5 lbs. 3 ply..... 5.5 lbs.

Corrugated iron:

Gauge No. 26	1.	Gauge No. 20	1.9
" " 24	1.3	" " 18	2.6
" " 22	1.6	" " 16	3.3

Corrugated asbestos:

	3 ply lbs.	4 ply lbs.	5 ply lbs.
Gauge No. 28	1.29	1.57	1.86
" " 26	1.43	1.72	2.00
" " 24	1.72	2.00	2.30
" " 22	2.00	2.30	2.57
" " 20	2.28	2.57	2.86

C. PLASTIC TYPES BUILT-UP ROOFS

	5 ply lbs.	4 ply lbs.	3 ply lbs.
Tar, gravel, and felt	6	5.5	9.6

At the same time that the framing is being considered, the kind of foundation for the material to be fastened to must be considered. Ordinary shingles are laid on either shingle lath, spaced apart to receive the nails, or on ⅞″ sheathing-boards tightly covering the rafters. The latter is considered to stop circulation of air and develop dry rot in the shingles. Slate is laid on either of the above-mentioned foundations, although it is generally conceded that the best is tongued and grooved sheathing-boards covered with tar paper or felt. However, in buildings of fireproof or semi-fireproof character both slate and tile are laid on a foundation of porous book tile, concrete, or on sheathing-boards nailed over such a base, or are fastened directly to stripping on the framework by copper wires. But it is always best to give a solid continuous base, so that the tiles can be fastened by copper nails, and some form of tar paper or asphalt base used between to prevent wind suction. Practically the same precautions hold true for asbestos shingles. Ready-roofing shingles must be nailed to continuous sheathing and separated so that expansion and contraction can be permitted. Large cement shingles are laid directly on the purlins and span between them.

Tin roofs require a good sheathing of white pine or spruce in narrow widths laid with tight joints. There is a difference of opinion as to whether or not sheathing-paper should be used, but if it is, it should be waterproofed, and no tar paper or other types containing any trace of acid should be accepted on account of their rust-producing action. Copper roofs are laid on the same type of foundation, although the kind of paper used is not as important.

Corrugated roofs of galvanized iron or asbestos or glass are generally laid directly on the purlins without any other foundation.

Built-up roofs of coal-tar, felt, and gravel are laid over wooden sheathing or concrete, the latter of course making the best foundation.

With the above facts settled upon, the problem next to consider is the collection of the necessary data on the construction requirements of the roofing material itself. This information is for detail drawings and specifications and must be secured with this end in mind. It would be impossible to include all the details of construction for each type of roof in this short article. After the selection of the roof has been made, much of this information is easily found in circular advertisements sent out by the manufacturers.

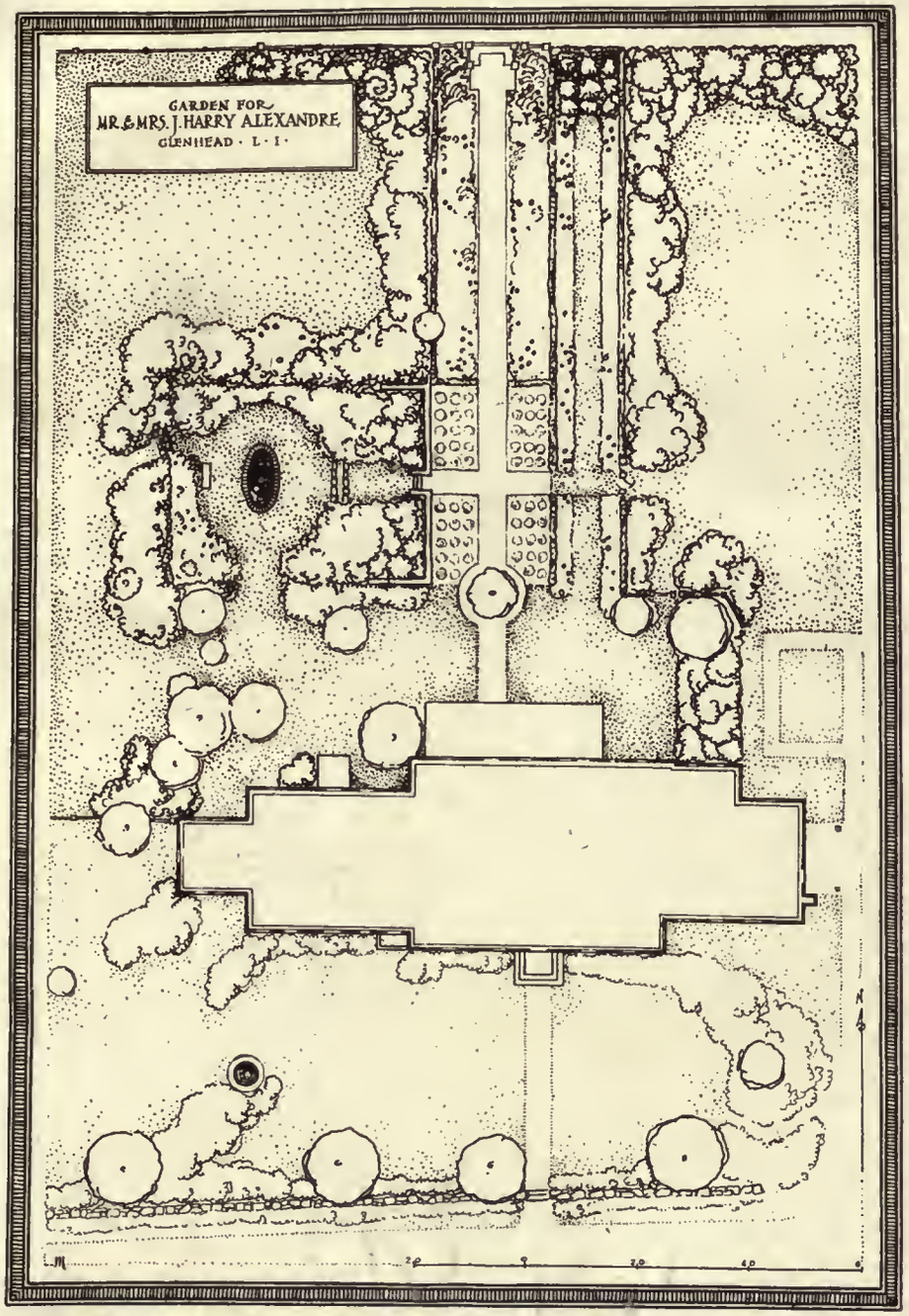
As a final check upon the selection of a roofing material, the architect must consider the fire hazards to which his building is exposed. This is a most important practical consideration and may upset all of his previous artistic attempts when considered entirely from a matter-of-fact point of view. Buildings in large cities are limited more by these fire conditions than in isolated positions. In fact, many city ordinances have definite regulations covering the subject.

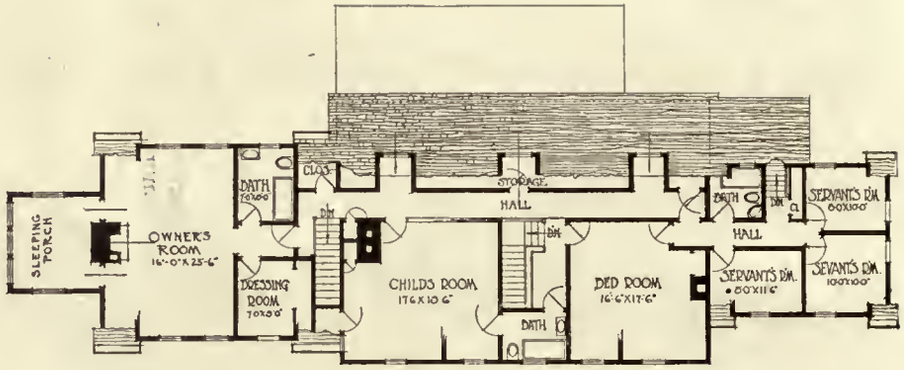
The usual fire test for a roofing material provides that it shall withstand the attack of burning firebrands for five minutes with a wind-pressure of five miles an hour without ignition of a clear dry white-pine decking beneath it, and shall not crack and expose the decking, nor slip badly, nor convey nor communicate fire badly, nor produce a serious flying-brand hazard when thus exposed. The test is made with a sample at the maximum angle of inclination advocated in practice. The brand consists of ten strips of hardened maple two inches square and three feet long, formed into a grid with a space of one and three-quarter inches between them. This brand is ignited and burning when placed on the sample. Of course this test is very crude, and by no means indicates the most severe conditions. The Underwriters' Laboratories have a more complicated and technical test which runs something as follows: Flame-exposure, burning-brand, and heat-radiation tests, each at wind velocities of five and forty miles per hour. Also tests to determine the effect of fire-streams, physical and chemical tests, investigations of practicability, durability, and uniformity. Results of these tests can be found in the report of the Underwriters.

It has been recommended that all buildings except dwellings, frame buildings, and buildings not exceeding two stories and 2,500 square feet area, not used for factories, warehouses, or mercantile purposes, should have roofs of brick, concrete, tile, or slate, or the highest grade of tin roofing, or of asbestos shingles, or of built-up asbestos roofing, or other roofings of like grade which would rank as class *A* or *B* under the test specifications of the National Board of Fire Underwriters. And that the roof of the above exceptions be of such a type as to rank in class *F* of the above tests.

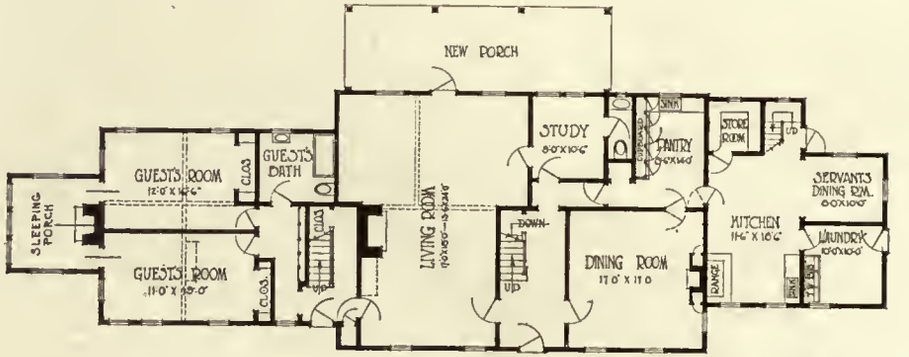
The same board recommends that a layer of deadening felt at least one-sixteenth of an inch thick be placed between the metal roofing and the supporting woodwork in order to prevent quick ignition of the wooden decking when the roof is exposed to burning brands or radiated heat. Under the same conditions, it is advocated that any roof having a pitch over sixty degrees on any building over forty feet in height, except towers or church spires, should be constructed of steel framework filled with fireproof material not less than three and one-half inch thick and be covered with an approved roofing material.

As for durability, it is generally conceded that for sloping roofs slate and clay tile make the best, if of good quality. However, slate breaks easily and so does tile, although the latter is somewhat stronger; but falling limbs of trees and stones thrown by children will generally cause trouble. Tile, on the other hand, does not make as tight a roof as slate. Asbestos shingle can be laid tighter than slate and is very durable in comparison. Cement shingles are too brittle for small sizes, but are quite durable in the larger sizes when they are reinforced. Wood shingles have not much merit for durability either in the weather or against fire hazards. (*Continued on page* 342.)





SECOND STORY PLAN



NOTE: ALL NEW WORK SHOWN HEAVY. ALL OLD WORK SHOWN IN LIGHT. ALL WORK REMOVED SHOWN IN DOTTED

FIRST STORY PLAN

PLANS.

Warren & Clark, Architects. Marian C. Coffin, Landscape Architect.

HOUSE, J. HARRY ALEXANDRE, GLEN HEAD, LONG ISLAND.

Copper roofs are the most durable type, for our climate, of the metallic roofs. It has been argued that lead roofs would compete well with them, but due to the creeping of this type of roof and also its low melting point, it has never become very popular in America. Tin roofs are durable, if they are kept thoroughly painted and are originally of a good brand of tin, but the maintenance problem is a real disadvantage. Galvanized iron roofs are best only for small temporary buildings. As for metal shingles of tin or galvanized iron, there is not much to favor them from a point of view of durability or art. Ready roofing materials generally give better results on pitches over three inches to the foot, but they are after all only temporary types of roofs, and should be used only on small inexpensive buildings.

For flat roofs it has been found that built-up roofs of coal-tar reinforced with felt and covered with a protecting coat of gravel, slag, or tile are the best. Coal-tar is generally considered better than asphalt, because it requires less expert skill to handle, and is cheaper. The kind of felt used has much to do with the durability. The felts on the market are made of rags, and consist mostly of cotton. Certain felts are made with asbestos, but these are not suited for coal-tar although unaffected by hot asphalt. The chief function of the felts is to reinforce the coal-tar pitch, but not to protect it, so that, where the roof is subject to wear, it ought to be protected by a covering of flat tile or brick instead of the usual gravel or slag.

As a final conclusion, the old question comes up, "What is the most important thing in a building next to the foundation?" Surely it is the roof, and the best roof is the cheapest in the end, even though it costs more in the beginning, and many a roof leaks because it was not flashed properly.

The First Pan-American Congress of Architects

THE Organizing Committee has announced that the first Pan-American Congress of Architects will meet March 1, 1920, at Montevideo. The architects of all the Americas are invited to attend and to exhibit their work, and the presence of the presidents and faculties of all schools of architecture is especially desired. The chief purposes of the long-planned convention are the demonstration of American architectural advancement, the discussion of artistic and technical development, and the increase of professional solidarity. Both practising and student architects are eligible as exhibitors, and prizes will be awarded to architects, schools, or faculties, and individual students in accordance with the decisions rendered by a chosen International Jury composed of professors of architecture.

The work of architects for exhibition are comprised in the following classification:

First, Projects of public buildings and monuments.
Second, Projects of private buildings and monuments.
Third, Projects of decoration.
Fourth, Details and motives of architecture.
Fifth, Works upon the history of architecture in America.

The projects mentioned in the first two classifications must be presented with their plans, frontage, and sections. They may or may not correspond to buildings already finished. When dealing with completed buildings, the exhibitor may present photographs of frontages or interiors to complete his idea. Details and perspectives will be admitted.

The projects of decoration mentioned in the third category must be composed of all the parts necessary for their clear understanding. Details and motives of architecture referred to in the fourth category may be presented in the form considered best, and photographs will be accepted in order to complete subjects. Studies upon the history of architecture may be presented in accordance with the best judgment of the exhibitor.

All exhibits must deal with buildings or monuments already constructed or to be carried out in America.

Exhibits must have the name and address of the exhibitor as well as its destination written clearly, and must be delivered to the Organizing Committee at Montevideo not later than February 10, 1920.

There will be established one or more Grand Prix D'Honneur with Gold Medal for the best projects corresponding to the first three categories of works, Gold Medals, First Mentions with Silver Medals, Second Mentions with Silver Medals, and Merit Diplomas for every one of the five categories.

Work of students which has been done in the schools under the direction of the professor and with his approval is eligible, providing it has been completed within the term in which programmed, and is accompanied by such programme. The signature of the professor and of the student and the date must also be upon the work.

One or more Gold Medals for the best works presented by each school or faculty, and Silver Medals, First Mentions, and Merit Diplomas for the best works of each course.

Concrete Aggregates

The result of a series of fire tests of more than one hundred full-size building columns made jointly by the National Board of Fire Underwriters, the Associated Factory Mutual Fire Insurance Companies, and the United States Bureau of Standards resulted in the following recommendations:

"1. That for fire-resistive construction, limestone, trap rock, blast-furnace slag, and well-burned clay be given a preference over highly siliceous gravels.

"2. That in cases where gravel aggregate is to be used, with no additional protective material over the concrete, round columns be given a preference over rectangular ones.

"3. That where gravel aggregate is used, all columns, but especially rectangular columns and round columns with spiral reinforcement, be given the additional protection of approximately one inch of Portland cement plaster either on metal lath or reinforced by light expanded metal."

The Blind Brook Club

By Frank A. Moore, Architect

SOME ONE has said that it is the function of the architect to produce in a building breadth, centrality, blitheness, and repose, and this is what the governors of the Blind Brook Club and the architect have endeavored to produce in the club-house situated on the high rolling ground of Westchester County overlooking Long Island Sound.

The club is a proprietary club, with one hundred and fifty members (all more or less favoring the breadth, centrality, blitheness, and repose idea), and the suggestion of organizing such a club originated with a few men who had enjoyed and appreciated the advantages of the Old Elm Country Club of Fort Sheridan, Illinois, also a proprietary club of limited membership, where it was found the links were never crowded, and where members and their guests could arrive at any hour of any day in the week and enjoy the great game of golf without being obliged to register twenty-four hours in advance a desire to play at a certain set time, nor being further moved to register a complaint at the finish of their game that they had been "held up all the way round," which is the condition existing in so many of our ever-increasing popular golf clubs.

The club-house itself is ideally situated at the highest part of the club property, and overlooks the entire golf course, with the first and tenth tees both located a few yards from the house. While the general design of the club-house may be said to be Italian, the building has been executed with freedom from limitations imposed by existing Italian buildings in so far as the demands for modern requirements, up-to-date conveniences, and present-day materials have all been carefully considered and made use of to obtain a desired result with symmetrical and carefully balanced exterior elevations, not too rigidly stiff or formal. The building is substantially constructed of terra-cotta blocks, stuccoed with a warm gray stucco finished with a rough enough surface to show a decided texture and to tone in well with the tile roof, which also has a rough texture appearance, laid with tile of eight or ten different shades of a dull red, and giving a pleasant coloring similar to that of old velvet.

The interior of the club-house is arranged with a locker-room wing of generous dimensions, with ten bedrooms on the second floor above for members, the servants sleeping-rooms being at the other end of the building over the kitchen quarters. The accepted traditional heritage of most golf houses, a basement locker-room, has not been adopted, the locker-room being placed on the first floor, purposely made unusually bright and cheerful, and opening directly into the lounge-room through swinging half-doors. The steel lockers themselves are very commodious, and are arranged with double doors, being fitted up with various compartments for clubs, shoes, clothes, etc. Rubber-tile flooring in eight-inch squares of black and pearl gray has been introduced in the locker-room and lounge, and nothing has given more satisfaction to the members than has this resilient floor-finish that permits the wearing of hobnailed shoes, ad libitum, without the floor becoming marked or dented, or presenting such a hard surface as to invite one to suddenly assume an unexpected sitting posture. The marble shower-baths are arranged with small dressing-rooms on either side, and are unusually ample and commodious. The club has its own artesian-well supply, with deep well-pump and storage-tanks located in basement; also its own refrigerating plant.

The planning and arrangement at the service end of the building for the kitchen, pantries, servants' and chauffeurs' dining-rooms and servants' bedrooms, and at the locker-room end of the building for the professionals' quarters, has been given careful consideration. A generous service yard properly enclosed and tied into the main building by a harmonious wall also combines with the caddy house, making the entire layout a complete unit.

The Blind Brook Club is the owner of a most interesting full-length oil-painting of one of the most celebrated golfers known, painted from life. It is framed in the panelling over the dining-room mantel, and the inscription, which is part of the setting, is as follows:

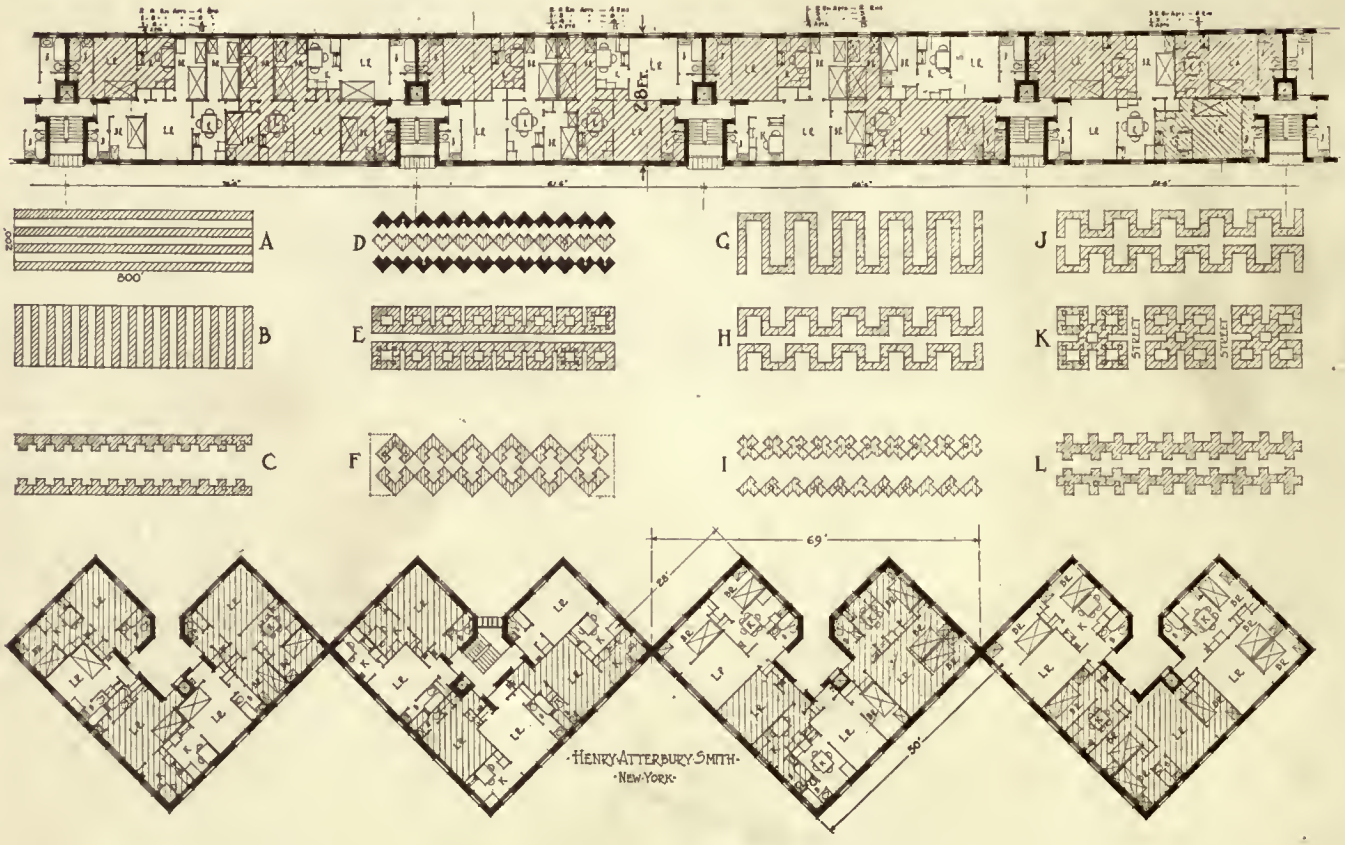
TOM MORRIS

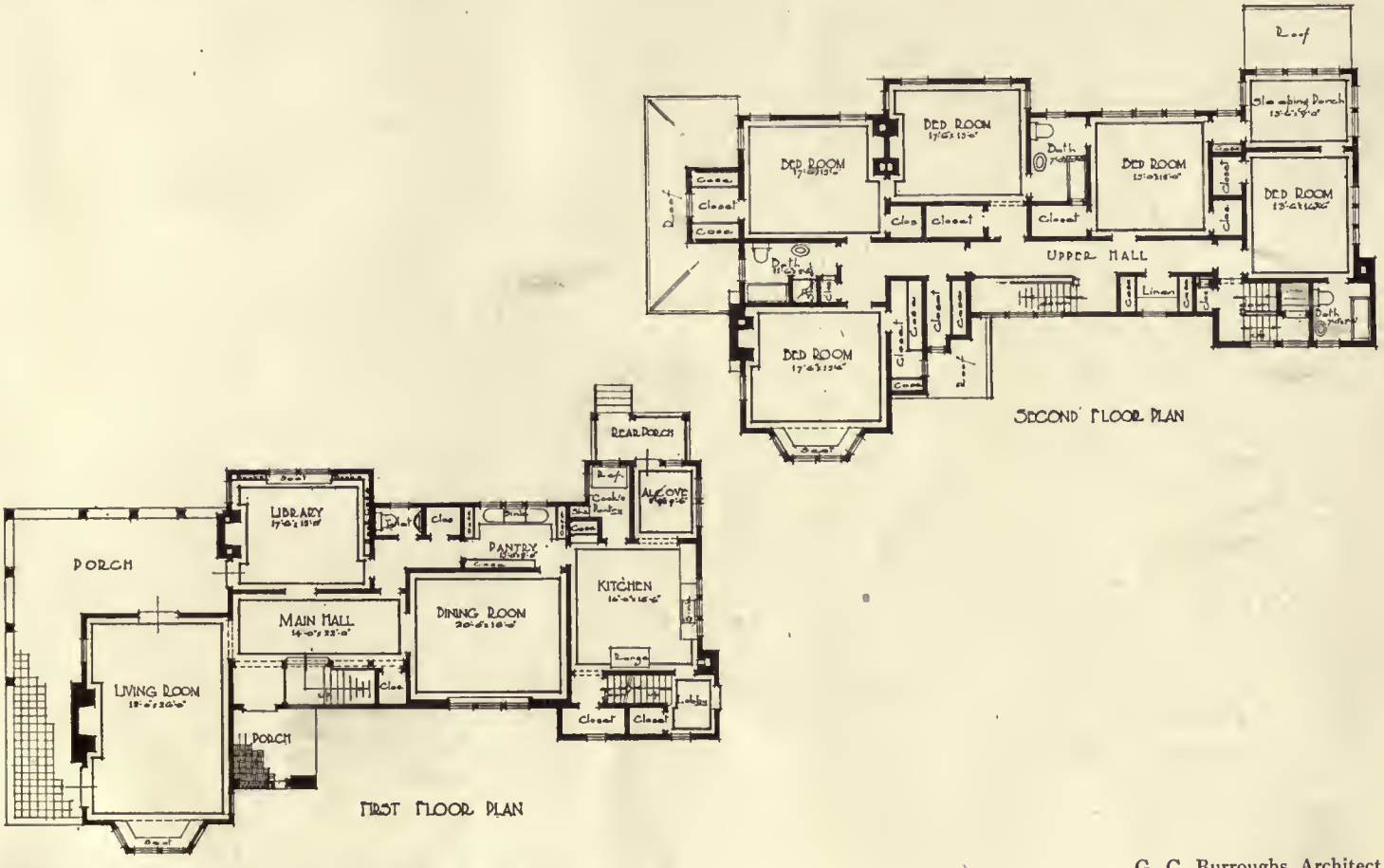
STANDING IN FRONT OF BUNKER KNOWN AS DEVILS KITCHEN WITH HELL BUNKER BEHIND HIM AND AULD GREY CITY OF SAINT ANDREWS AFAR

Comparison of the Various Types of Plan Adapted to Block Formation, Block Size 200 x 800

By Henry Atterbury Smith, Architect

PLAN	NUMBER OF FAMILIES	NUMBER OF STAIRWAYS	PERCENTAGE OF LOT COVERED	PERIPHERY
A	192	48	56 per cent	6,624 feet
B	180	45	52 per cent	6,840 feet
C	143	26	37 per cent	4,456 feet
D	192	36	45⅓ per cent	7,200 feet
E	294	64	70 per cent	7,244 feet
F	162	36	36 per cent	4,766 feet
G	152	33	47 per cent	5,440 feet
H	200	40	50¾ per cent	5,908 feet
I	125	21	40 per cent	5,810 feet
J	200	40	50¾ per cent	5,908 feet
K	240	48	61½ per cent	6,390 feet
L	140	20	49 per cent	5,712 feet





HOUSE AND PLANS, FRED VON STEINWEHR, CINCINNATI, O.

G. C. Burroughs, Architect.

Modern Building Superintendence

By David B. Emerson

CHAPTER IV

CUT STONE, ORNAMENTAL TERRA-COTTA, AND BRICKWORK

THE base course around the building on all of the street fronts was specified to be granite from the quarries at Concord, N. H., to be dressed six cuts to the inch on all exposed surfaces, except the steps at the entrances, which will be eight cuts to the inch. On delivery at the building the granite was inspected to see if it was cut according to the dimensions on the drawings and if the face cutting was as fine as called for in the specifications. Also it was examined to find if there were any seams, any black or white lumps called knots, seams with discolored edges called shakes or brown stains called sap, any of which would be cause for the rejection of the stone. Bed joints were tested to see if they were worked hollow or slack on the back of bed, and if in all cases they were at least three inches wide. Seams were easily detected by tapping the stone with a hammer. One suspicious-looking piece was found to have been fractured and patched.

Patching was done by sticking a piece of stone on the fractured piece by means of shellac, and then rubbing stone dust into the joints to make a smooth, even surface. This patched piece was condemned and ordered to be replaced with a sound stone, as in time the weather would destroy the shellac and cause the patch to eventually drop out, leaving the broken stone. All cut stone was specified to be set in non-staining mortar, plastered on the back with the same mortar, and the first course in the backing up brick next to the facing stone should also be laid up by the bricklayers in the same mortar as is used by the stone-setters.

The cement selected was Atlas white cement, to be mixed in the proportion of one part cement, one-half part lime paste, and two parts clean sharp sand. The lime was first slaked with cold water and screened through a three-sixteenths-inch mesh screen into a settling-box. The lime putty was allowed to stand for at least one week, and then mixed with the sand and cement, and used for setting the stone. All sand was screened and washed before using. Care was taken to see that all stone was set in a full bed of mortar and that the mortar was kept back three-quarters of an inch from the face of the stone to allow for pointing. Joints were called for to be one-quarter of an inch thick. Wooden wedges were set in joints at the face of all stones to insure uniform joints; these wedges were not to be removed until the stonework was cleaned and pointed. All stone not easily lifted were ordered to be derrick set, and no Lewis holes were allowed to be made less than two and a half inches from the face of the stone, and where they would be entirely covered by the stone above.

The limestone was delivered at the building properly boxed and numbered according to the contractor's setting plans; stone was ordered to be set upon planks to keep it entirely clear of the ground until it was set. Before setting, all stone was inspected for evenness of color and for seams, holes, or cavities filled with sand, clay, or uncemented material. The exposed faces of all stones should be cut true, and all arrises should be full and true, and the front edges of all joints should be cut back one and one-half inches on all beds and joints; no false joints nor mitre joints were to be allowed. Every alternate course in the ashlar was bonded into the walls twelve inches, and every intermediate course was bonded eight inches into the walls. All stones in projecting courses were examined to see that in all cases the beds exceeded the projection of the stones beyond the face of the wall. Each stone was secured in place by means of two galvanized-iron anchors thirteen-sixteenths of an inch by one inch, turned up two inches in the brickwork and one inch down into the stone, and we insisted upon proper care being taken in the cutting of all anchor-holes, so that a good grip in the stone was given for all anchors. As the stone-setters never like to do this part of their work carefully, seeming to think anything will do so long as the anchor is there, a little insistence on the part of the superintendent is generally necessary to get proper results. Wherever it was deemed necessary, more than two anchors to a stone were called for, and in some cases the stones were ordered bolted down with galvanized-iron rods with square washers at the top and bottom. All window-sills were set with open under joints, to be pointed up at the completion of the building, so as to prevent cracking from settlement. All of the top joints in projecting courses and balconies were specified to be caulked with oakum, and pointed up with an approved plastic cement. As soon as the stone was set the foreman was ordered to protect all projections, top surfaces, and angles with proper boarding, thoroughly secured to the work, and to keep it protected until the completion of the building. All carved stone was to be boasted out ready for carving. This we inspected very carefully to see that in all cases sufficient material was provided to give the required relief to the carving. Great care was exercised to prevent splashing of the stone with mortar when setting it, and any mortar which may have been splashed on the stone was cleaned off before it had set. While the stone was arriving and being made ready for setting, the brickwork was started and carried up ready to receive the stone, and the stone was backed as rapidly as it was set.

All walls and piers in the basement, the backing up of all front walls, and the rear wall in the first story were of brick.

A number of loads of brick were delivered at the building. We looked them over as they arrived, and found them to be of good, even color and well shaped. By striking two together and finding that they gave a sharp, ringing sound, and repeating the process with a number of the bricks, they were found to be hard-burned.

The mortar for use in laying up the brick was specified to be composed of one part Portland cement and three parts good, clean, sharp sand, with the addition of ten pounds of hydrated lime to each bag of cement. The addition of hydrated lime, or lime putty, is a very good practice, as it renders the mortar more plastic, causing it to spread better, and also decreases its permeability to moisture. On large work in the city hydrated lime is more convenient than lime putty, as it does not have to be slaked ahead, and a large

amount of space does not have to be given up to stirring the lime paste while it is seasoning. Before laying, all brick should be thoroughly wet. There are four good reasons for the wetting of brick before laying: first, the bricks will be better bedded on the mortar under them; second, they will adhere to the mortar better; third, a dry brick soaks water out of mortar very quickly, and mortar will not set properly unless it dries slowly; fourth, wetting the brick washes the dust from them, and clean brick offer the best surface for mortar to adhere to. In wetting brick be careful not to wet them to a point where they will run out of place when laid in the mortar. Particular attention was paid while the brick were being laid that they were laid to the line, that the walls were plumb and true, and that all brick were well bedded and slushed up with mortar. We were just in time to catch one of the bricklayers doing what is a common and a very bad practice on steel-framed buildings, that is, in bricking up around the wall columns, to lay up the outside brick several courses high, one course thick, bonding into the wall, and then filling the interior space around the columns with brickbats and mortar thrown in at random. This work was ordered torn down and rebuilt in a proper manner, all brick being properly bonded and built in around the columns. The walls above the second story were to be of hollow tile eight inches thick, faced with four inches of brick, and bonded together with special header backer tiles, bonding every sixth course of brick. This type of wall has several advantages over the solid-brick wall: first, the decreased weight, a square foot of solid-brick wall twelve inches thick weighing about one hundred and twenty pounds, whereas, a brick-and-tile wall twelve inches thick only weighs about eighty-seven pounds per square foot, which makes quite a reduction in dead load, thereby making it possible to use smaller wall girders, smaller column sections, and smaller grillage, materially reducing the steel tonnage; second, the hollow-tile wall makes furring unnecessary, as the plaster can be applied directly to the scarred surface of the tile, and the hollow tile makes an insulated wall which renders the building warmer in winter and cooler in summer. The walls on the three street-fronts above the third story will be faced with a selected front brick laid with a wide-cut joint. Window-sills, lintels, bell courses, and main cornice will be of matt-glazed terra-cotta. Before commencing to lay up face brickwork, the contractor should lay up a sample panel at least four feet square to determine the width of joints, etc. After this has been approved the work can commence.

We were very careful to see that the mortar for laying up of the front brick was mixed very stiff and with coarse sand to obtain joints of the required thickness; also care was taken that the ingredients in each batch were measured to obtain an even color in the mortar. The foreman was instructed to back up all face brick before quitting work, so that the mortar would not dry out a lighter color, nor its strength be decreased.

All terra-cotta was examined on its arrival for warped, kiln-cracked, crazed, surface-checked, chipped, or painted pieces. A few were found which were checked and cracked, they were condemned, and the contractor was ordered to replace them with perfect material without delay. The top joints on all sills, bell courses, and the main cornice were raised. All terra-cotta was anchored back into masonry with galvanized wrought-iron anchors, ties, and bolts. All portions of the terra-cotta inside the face of the walls were filled solid with bricks and mortar, but care was taken that no part of the terra-cotta which projected beyond the face of the walls should be filled.

The window-frames were set as the walls were laid up, care being taken to see that they were plumb and in line and that they were properly stayed. In the case of tall frames we ordered spreaders put in between the sides of frames to keep the brickwork from bowing them in.

Brick and terra-cotta were pointed up, as the work was laid, and left ready for cleaning down at completion. When the walls were up a few stories and the floor slabs had set and the forms had been removed, the work of setting the terra-cotta partitions and wall furring was commenced so that there would be no delay in the work, and that as soon as the building was enclosed and the roof covered, the plastering could be commenced.

To give architectural effect, and also to keep out the dampness, the walls in the first story were to be furred with hollow-tile furring blocks. The blocks should be anchored to the walls with galvanized-iron anchors. All pipe and conduit will be furred around, and the furring which runs around pipe will be tied back to the wall with galvanized-iron ties. Wherever the furring is run over window-heads, the contractor must set angle-iron lintels to carry the furring; lintels must be painted to prevent rust from staining the plaster. All partitions, except some special partitions in the basement and in the banking-rooms, will be of hollow, porous terra-cotta blocks laid in cement mortar, and anchored together with galvanized-iron ties. All blocks should be examined to see if there are any cracked, warped, or soft blocks among them, which must be condemned. See that the blocks are thoroughly wet before laying. All openings for doors and windows will have steel channel backs, as wide as the thickness of the partitions; the sides of the bricks must butt against the head-pieces, which will build into the partitions one foot on either side of the opening. The bricks must be tapped to fasten the frames and trim to them. Where the bricks are not covered by the trim they must be lathed over with metal lath to prevent the plaster from cracking.

The walls having been topped out, the parapet walls built and coped, the next important step in the construction of the building is the laying of the roof, which in this particular case will be of flat promenade tile. Before laying the roofing, the roof slab should be thoroughly cleaned off, and all slopes and crickets formed with cinder fill, composed of one part Portland cement, two parts sand, and ten parts clean, strained cinders. We inspected the cinders carefully to see that they contained no ashes, and ordered them thoroughly washed to remove all sulphur and dirt. The cinder fill was given a screed coat of cement mortar one inch thick to level it off, and all rough places in the roof slab were levelled off with cement mortar, so as to make a good, smooth surface for laying the roofing felt. The entire roof surface was given one good coat of hot-coal tar pitch well mopped on. On this coat of tar was laid five layers of heavy saturated roofing felt; each layer was coated with hot-coal tar pitch, and each sheet was lapped one-fifth of its width, and the joints cemented one-third of their width with the pitch. The junctions of the roof with all vertical surfaces were flashed with sixteen-ounce soft-rolled copper, the flashing was laid in between the third and fourth layer of felt, and extended out not less than four inches on the roof, and was carried up twelve inches on all vertical surfaces. The flashings were all cap-flashed. We were careful to watch and see that all cap-flashings were built a full four inches into the walls and turned down not less than three inches over the flashings. The sheets of copper which formed

(*Continued on page 350*)

MAIN BUILDING.

GROUP

Stone & Webster, Engineers.

ROESSLER & HASSLACHER CHEMICAL CO., PERTH AMBOY, N. J.

HOLEPROOF HOSIERY COMPANY OF CANADA, LTD., LONDON, ONTARIO. Lockwood, Greene & Co., Engineers.

The new building for the Holeproof Hosiery Company of Canada, Ltd., will be constructed of gray brick with limestone trimmings in a modern Gothic style. The cut shows a rendering of one-half of this building.

OVERLAND SERVICE BUILDING, BOSTON, MASS. Fred T. Ley & Co., Engineers.

the flashings were put together with a lock joint and soldered; the edges of all sheets were tinned before soldering, so that the solder would hold better. The tile was laid on top of the felt, and was well bedded in cement mortar. They were butted up close against all flashings. The connections to rain-water leaders were made by means of patent roof connections with cast-brass strainers and expansion joints, which are far superior to the old-time copper scuppers and spouts. All of the penthouses around stairways, elevators, and tanks were built up of hollow terra-cotta blocks in angle-iron framing. The outside walls were plastered three coats of waterproofed cement stucco. The mortar for plastering was composed of one part Portland cement, three parts sand, with the addition of ten pounds of hydrated lime to each bag of cement. We were obliged to watch this part of the work very closely to see that the mortar was properly mixed and that only a small quantity was mixed at a time, the cement, sand, and lime being mixed together dry and then wet, and the whole turned over until it reached a uniform color and consistency. No mortar which had been mixed over thirty minutes was allowed to be used, and no mortar was allowed to be retempered under any circumstances. The building was now ready for plastering and the laying of the tile and mosaic floors.

(*To be continued*)

Book Reviews

THE FOUNDATIONS OF CLASSICAL ARCHITECTURE. By Herbert Langford Warren. 8vo. Illustrated from documents and original drawings. Macmillan Co., New York.

This posthumous volume, published from manuscript left at the time of his death by Professor Warren, is an inspiring and scholarly contribution to architectural history, and makes us regret the more keenly that he could not have lived to carry out his plan of writing a history on a large scale which should trace the development of architecture in its relation to civilization, and should join with the historical narration the stimulating analysis of fundamental and universal forms. In this volume are traced beginnings in Egypt, Mesopotamia, Persia, the Ægean, and Greece.

More than half of the book is given to the discussion of the development of architecture in Greece, giving a very complete and comparative analysis of the development of the Doric and Ionic orders. The Introduction by Professor Fiske Kimball, of the University of Virginia, contains a fitting tribute to the high place Mr. Warren held in the profession, both as a teacher and a practising architect. The following words from one of the author's essays presents his own ideals of practice, and may well express the aspirations of every member of the profession:

"We cannot, if we would, escape the influence of all the art of the past which is brought to our doors and, as it were, thrust into our hands. Our choice lies simply between really knowing it and using it wisely in the fulness of knowledge, or knowing it only superficially and misusing and misapplying it ignorantly. . . . We must seek to combine scholarship with artistic impulse and enthusiasm, must seek to give that impulse and enthusiasm the sure basis of knowledge. For the support which the architect of the past received from tradition we must substitute scholarship. Not the scholarship which is concerned with facts merely, with archæological study of outward forms; but the scholarship concerned with principles, which studies the art of the great epochs of the past in order to understand if possible those fundamental qualities which made it great, which penetrates to the meaning of the forms used, which analyzes and compares for the purpose of gaining inspiration, in order that it may create by following consciously the principles which are seen to have been followed unconsciously in the great art of the past, developing if possible by degrees a tradition of what is best in all past forms, because it understands what to take and what to modify in order to meet the conditions of the present."

Books and Catalogues Received

"As Manufactured in Wrought Steel" and "Buildings You Have Seen." From the Stanley Works, New Britain, Conn.

"Brick, How to Build and Estimate." Illustrated. A presentation of facts for prospective owners of brick houses and a manual of construction data on brickwork for contractors and builders. By William Carver. The Common-Brick Manufacturers Association of America. 111 West Washington Street, Chicago.

"Proposed Building Zones for Newark." Tentative report of the Commission on Building Districts and Restrictions.

"American Greenhouses and Gardens." With drawings in black-and-white and colors. American Greenhouse Mfg. Co., New York and Chicago.

"The Industrial Building Book." Compiled by Charles F. Dingman. A book of practical and suggestive value based on actual work and figures of costs. Flynt Building and Construction Co., Palmer, Mass.

Annual of the School of Architecture. Columbia University for 1918. The university announces that there is promise of a greatly increased enrolment in both the School of Architecture and the Extension Teaching course for 1919–20.

Latin Tiles, an illustrated catalogue from Gladding, McBean & Co., San Francisco, is an admirable example of good taste in its cover design and its illustrations.

Announcements

George A. Fuller Co. announces that Colonel W. A. Starrett has joined the company's organization and will serve as vice-president and director.

The Arden Gallery, 599 Fifth Avenue, Scribner Building, announces the twenty-first annual exhibition of the American Society of Miniature Painters and of Durant Faience, November 24 until December 31, 1919.

The firm of Charles H. Higgins, architects and engineers, wishes to announce that Captain Joseph R. Greenwood, having recently received his discharge from the army, has renewed his association with the firm, which was interrupted during the war.

Mr. Henry C. Millott, of Sandusky, Ohio, announces that Mr. Harold Parker has become associated with him for the practice of architecture under the name of Millott & Parker.

Chester E. Wolfley and Arthur G. Ehil announce the formation of a partnership for the practice of architecture, to be known as Wolfley & Ehil, architects. Their offices will be located at 610 Stewart Building, Rockford, Illinois. After December 1 they will be pleased to receive manufacturers' catalogues and samples.

Mr. Donald C. Bollard announces the opening of his office, for the practice of architecture, at 303 McCague Building, Omaha, Nebraska. Manufacturers' catalogues requested.

Keffer & Jones, of Des Moines, Iowa, having outgrown their quarters in the Hubbell Building, are now located at 204 Masonic Temple.

William E. Haugaard announces the opening of offices at 185 Madison Avenue, New York City, for the practice of architecture. Charles H. Mills, architect, of Wilmington, Del., associate. Manufacturers' catalogues desired.

Mann & MacNeille, architects and construction engineers, New York City, announce the opening of a branch office in the Book Building, Detroit, Mich. The Detroit office has been opened to facilitate the work of this organization in industrial housing, city planning, municipal expansion, general architectural design and construction throughout the Middle West.

Mr. Alfred Bossom wishes to announce that he has removed his architectural offices to the top floor of Number 680 Fifth Avenue, New York City.

We sincerely regret that the name of the artist who made the drawings accompanying the article on the O. Henry Hotel was omitted. They were especially drawn by Mr. Howard E. Watkins, whose skill as a designer and draftsman is widely known to the profession.